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THE
ZOOLOGICAL RECORD

VOLUME THE FORTY-FIRST

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1904.

BY D. SHARP, R. LYDEKKER, R. BOWDLER SHARPE, G. A. BOULENGER, W. T.
CALMAN, E. R. SYKES, E. A. SMITH, EUGÈNE SIMON, FILIPPO SILVESTRI,
ALICE L. EMBLETON, F. A. BATHER, W. WOODLAND, AND H. M. WOODCOCK.

EDITED (FOR THE ZOOLOGICAL SOCIETY OF LONDON) BY

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The Editor thanks those Societies and individuals who have forwarded works and papers for the purposes of the Record, and suggests that Societies publishing Zoological Papers would much facilitate the work of the Recorders by forwarding a separate copy of each Zoological Memoir they publish to the Editor for the use of the Recorder. This is preferable to sending the entire volume, because each paper can go directly to the Recorder it concerns.

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PREFACE.

THE preparation of this Volume of the Zoological Record has been facilitated by the liberality of the Council of the Zoological Society, who granted an additional sum for assistance to the Recorders in searching the literature. This work was undertaken in chief part by Mr C. D. SHERBORN; and so far as works only in the libraries at Cambridge are concerned, by Mr S. MATTHEWS of the Philosophical Library there. Thanks to their industry the Recorders have been able to complete the Volume within the usual period.

Dr CALMAN being unable to execute the Arachnida and Myriapoda these groups have been most kindly undertaken by Monsr. SIMON, and Prof. SILVESTRI. As Prof. MINCHIN has been absent for the longer part of the year on a Government mission to Uganda, his Record of Spongix has been in larger part accomplished by Mr WOODLAND.

The list of abbreviations has been revised by the Librarians of the Royal Society, of the Natural History Museum, of the Science Library Victoria and Albert Museum, of the Zoological Society, of the Linnean Society, of the Radcliffe Library, of the Philosophical Society Cambridge; and our thanks are due to them for their assistance.

D. SHARP.

CAMBRIDGE.

20th November 1905.

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CONTENTS.

LIST OF ABBREVIATIONS AND OF TITLES OF JOURNALS.

RECORDS:—

- I. GENERAL SUBJECTS. By D. SHARP, M.A., F.R.S. (Cambridge.)
- II. MAMMALIA. By R. LYDEKKER, F.R.S. (Harpenden.)
- III. AVES. By R. BOWDLER SHARPE, LL.D. (British Museum, Natural History.)
- IV. REPTILIA AND BATRACHIA. By G. A. BOULENGER, F.R.S. (British Museum, Natural History.)
- V. PISCES. By G. A. BOULENGER, F.R.S. (British Museum, Natural History.)
- VI. TUNICATA. By W. T. CALMAN, D.Sc. (London.)
- VII. MOLLUSCA. By E. R. SYKES, B.A., F.L.S. (London), assisted by E. A. SMITH, F.Z.S. (British Museum, Natural History.)
- VIII. BRACHIOPODA. By E. R. SYKES, B.A., F.L.S. (London), assisted by E. A. SMITH, F.Z.S. (British Museum, Natural History.)
- IX. BRYOZOA. By ALICE L. EMBLETON, B.Sc. (Liverpool.)
- X. CRUSTACEA (incl. GIGANTOSTRACA). By W. T. CALMAN, D.Sc. (London.)
- XI. ARACHNIDA. By EUGÈNE SIMON. (Paris.)
- XII. MYRIOPODA AND PROTOTRACHEATA. By FILIPPO SILVESTRI. (Portici.)
- XIII. INSECTA. By D. SHARP, M.A., F.R.S. (Cambridge.)
- XIV. ECHINODERMA. By F. A. BATHER, M.A., etc. (British Museum, Natural History.)
- XV. VERMES (incl. HEMICHORDATA). By ALICE L. EMBLETON, B.Sc. (Liverpool.)
- XVI. COELENTERATA. By ALICE L. EMBLETON, B.Sc. (Liverpool.)
- XVII. SPONGIÆ. By W. WOODLAND. (London.)
- XVIII. PROTOZOA. By H. M. WOODCOCK. (London.)

ALPHABETICAL INDEX OF NEW NAMES OF GENERA AND SUBGENERA.
By the EDITOR.

ALPHABETICAL LIST
OF THE
ABBREVIATIONS
USED IN THE
ZOOLOGICAL RECORD, VOL. XLI, 1904,
FOR THE
TITLES OF THE JOURNALS, TRANSACTIONS, ETC.
THAT CONTAIN ZOOLOGICAL PAPERS;
WITH INDICATIONS OF SOME OF THE PRINCIPAL
LIBRARIES
IN WHICH THE BOOKS ARE CURRENT.

THE primary object of this list is to enable those using the Record to find with ease the full title of a Journal they see quoted in an abbreviated form. The arrangement is therefore a simple alphabetical list of the abbreviations, uncomplicated by syllabic or verbal limitations.

The list has also to serve the Recorders and others as a list of Journals, and for this purpose it is important that it should be fairly complete as regards current periodicals. In order to increase the utility of the list, the abbreviations have been made on a uniform system; but a few exceptions have, in practice, been found necessary. The chief points that have been kept in view in constructing the abbreviations may be briefly stated as follows:—

The words selected as distinctive in each title are reduced in most cases to three or four.

A distinct abbreviation is used for each different word, and the same abbreviation for the same word is used throughout the list.

Accents are omitted. As a rule the first word of the title is represented by an abbreviation, but this rule is departed from in the case of articles and prepositions, and occasionally in the case of adjectives that are useless for distinctive purposes. Thus "Annual Report" becomes "Rep.," and "Occasional Papers" becomes "Pap." Such adjectives as "New" and "Royal" are omitted, except when necessary for distinctive or other purposes.

The consecutive order of the words of the title is maintained in the abbreviation, except in a few cases where the arrangement of the words in the title is very unusual or faulty.

As an example of the form of abbreviation that is aimed at, we may take Bull. Soc. Moscou. The name of the locality is given at greater length than the more frequently used portions of the abbreviation.

After the titles, the place of publication is given, and this is followed by letters indicating some of the principal libraries in which the works may be consulted. The explanation of these letters is as follows:—

- N. = British Museum Natural History: general library.
 Nz. = " " library, zoological department.
 Ng. = " " geological " "
 K. = Science library; Victoria and Albert Museum.
 R. = Royal Society library.
 Z. = Zoological Society library.
 L. = Linnean " "
 C. = Cambridge University library.
 C, p or (C) p = Cambridge Philosophical Society library.
 b, or g, or y, or z, after C, or (C) = Cambridge Balfour, or Sedgwick Museum, or Physiological, or Zoological libraries respectively.
 O. = Radcliffe library, Oxford.
 § is prefixed to titles added since the last list, and to changes of titles when important.

Abeille—L'Abeille: Journal d'entomologie publié par la Société entomologique de France. (Paris, 8vo.) Nz. C.

Abh. Ak. Berlin—Abhandlungen der königlich Preussischen Akademie der Wissenschaften zu Berlin. (Berlin, 4to.) N. K. R. Z. L. C, p. O.

Abh. Bayer. Ak.—Abhandlungen der mathematisch-physikalischen Classe der königlichen Bayerischen Akademie der Wissenschaften. (München, 4to.) N. K. R. Z. L. C, p. O.

Abh. Böhmisch. Ges.—Abhandlungen der mathematisch-naturwissenschaftlichen Classe der k. Böhmisches Gesellschaft. [Called also] Rozprawy tridy matematicko-přírodvěcké královské Ceske společnosti Nauk. (Prag, 4to.) N. K. R. L. C, p.

Abh. deutsch. Seefisch.-Ver.—Abhandlungen des deutschen Seefischerei-Vereins. (Berlin, 4to.) Nz. C.

Abh. geol. Karte Elsass—Abhandlungen zur geologischen Spezial-Karte von Elsass-Lothringen. (Strassburg, 8vo.) Ng.

Abh. geol. Landesanst. Darmstadt—Abhandlungen der grossherzoglich Hessischen geologischen Landesanstalt zu Darmstadt. (Darmstadt, 8vo.) Ng.

Abh. geol. Reichsanst.—Abhandlungen der Kaiserlich-Königlichen geologischen Reichsanstalt. (Vienna, 4to.) Ng. R. L. C.

Abh. Ges. Görlitz—Abhandlungen der naturforschenden Gesellschaft zu Görlitz. (Görlitz, 8vo.) N. K. R.

Abh. Ges. Götting.—Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-Physikalische Klasse. Neue Folge. (Göttingen, 4to.) N. R. Z. L. C, p. O.

Abh. Ges. Halle—Abhandlungen der naturforschenden Gesellschaft zu Halle. (Halle, 4to.) N. K. R. Z. L. C. O.

Abh. Ges. Isis—Sitzungsberichte und Abhandlungen der naturwissenschaftlichen Gesellschaft 'Isis' in Dresden. (Dresden, 8vo.) N. K. Z. C.

Abh. Ges. Königsb.--[Part of *Schr. Ges. Königsb.*, q.v.]

- Abh. Ges. Nurnberg*—Abhandlungen der naturhistorischen Gesellschaft zu Nürnberg. (Nürnberg, 8vo.) N. K. C.
- Abh. Ges. Wien*—Abhandlungen der K. K. zoologischen-botanischen Gesellschaft in Wien. N. K. R. Z. L. C. O.
- Abh. Hamburg. Anst.*—[Part of *Jahrb. Hamburg. Anst.*, q.v.]
- Abh. Mus. Dresden*—Abhandlungen und Berichte des königlichen zoologischen und anthropologisch-ethnographischen Museums zu Dresden. (Berlin, 4to.) Nz. Z. C.
- Abh. Preuss. geol. Landesanst.*—Abhandlungen der königlich Preussischen geologischen Landesanstalt (Neue Folge). [Formerly *Abh. geol. Spezialkarte von Preussen und den Thüringischen Staaten.*] (Berlin, 8vo.) Ng. K. C.
- Abh. Sachs. Ges.*—Abhandlungen der k. Sächsischen Gesellschaft der Wissenschaften. (Leipzig, 4to.) N. K. R. C, p.
- Abh. Schweiz. pal. Ges.*—Abhandlungen der Schweizerischen paläontologischen Gesellschaft. Mémoires de la Société Paléontologique suisse. (Basel, &c., 4to.) Ng. R. Z. (C) g. O.
- Abh. Senckenb. Ges.*—Abhandlungen herausgegeben von der Senckenbergischen naturforschenden Gesellschaft. (Frankfort a.-M., 4to.) N. K. R. Z. L. C. O.
- Abh. Ver. Bremen*—Abhandlungen herausgegeben vom naturwissenschaftlichen Verein zu Bremen. (Bremen, 8vo.) N. K. R. Z. L. C.
- Abh. Ver. Hamburg*—Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben vom naturwissenschaftlichen Verein in Hamburg. (Hamburg, 4to.) N. K. R. Z. L. C, b.
- Abh. Ver. Karlsruhe*—[Vide *Verh. Ver. Karlsruhe.*]
- Abh. Ver. Kassel*—[Issued with *Ber. Ver. Kassel*, q.v.]
- Abh. Ver. Lotos*—Abhandlungen des deutschen naturwissenschaftlich-medicinischen Vereines für Böhmen "Lotos." (Prag, 4to.) N. C.
- Acta Ac. German.*—N. Acta Academiæ Cæsareæ Leopoldino-Carolinæ Germanicæ naturæ curiosorum. [Called also] Verhandlungen der k. Leop.-Carol. deutschen Akademie der Naturforscher. (Halle, 4to.) N. K. R. Z. L. C, p. O.
- Act. Ac. Cordoba*—Actas de la Academia nacional de Ciencias en Córdoba. (Buenos Aires, 4to.) N. R. Z. L.
- Acta Soc. Faun. Fenn.*—Acta Societatis pro Fauna et Flora Fennica. (Helsingfors, 8vo.) N. R. L. C.
- Acta Soc. Lund.*—Acta regiæ Societatis physiographicæ Lundensis. [Published as part of *Acta Univ. Lund.*, q.v.]
- Acta Soc. Sci. Fenn.*—Acta Societatis Scientiarum Fennicæ. (Helsingfors, 4to.) N. K. R. Z. (C) p.
- Acta Soc. Upsal.*—Nova Acta regiæ Societatis Scientiarum Upsaliensis. (Upsala, 4to.) N. K. R. Z. L. C, p.
- Acta Univ. Lund.*—Acta Universitatis Lundensis. [Called also] Lunds Universitets Årsskrift, [and includes] Acta regiæ Societatis physiographicæ Lundensis, [also called] Kongl. fysiografiska Sällskapets i Lund Handlingar. (Lund, 4to.) N. K. R. L. C, p.
- Actes Mus. Rouen*—Actes du Muséum d'histoire naturelle de Rouen. (Rouen, 8vo.) N. L.

- Act. Soc. Bordeaux*—Actes de la Société Linnéenne de Bordeaux. (Bordeaux, 8vo.) N. Z. C.
- Act. Soc. Chili*—Actes de la Société scientifique du Chili. (Santiago, 4to.) N. R. Z.
- § *Act. Soc. ent. Bohem.*—Acta Societatis entomologicae Bohemiae. [Called also Časopis České Společnosti entomologické.] (Praze, 8vo.)
- Act. Soc. Espan.*—Actas de la Sociedad española de historia natural. (Madrid, 8vo.) N. R. Z. C.
- Act. Soc. Helvet.*—Actes de la Société Helvétique des Sciences naturelles. [Called also] Verhandlungen der schweizerischen naturforschenden Gesellschaft. (Basel, &c., 8vo.) N. K. R. L. C. O.
- Afh. Mus. Lund.*—E Museo Lundii. En Samling af Afhandlinger. (Kjobnhavn, 8vo.) N. K. R. Z. L.
- Agric. Gaz. N. S. W.*—The Agricultural Gazette of New South Wales. (Sydney, 8vo.) Nz. R.
- Agric. Ledger*—The Agricultural Ledger. (Calcutta, 8vo.) Nz.
- Allatt. Kozl. Magyar Tars.*—Allattani Közlemények a K. M. Természettudományi Társulat állattani szakosztályának folyóirata. (Budapest, 8vo.) N.
- Allg. Naturf. Zeit.*—Allgemeine Naturforscher Zeitung. (Berlin.)
- Allg. Zeitschr. Ent.*—Allgemeine Zeitschrift für Entomologie. Organ der "Allgemeinen entomologischen Gesellschaft." (Neudamm, 8vo.) Nz. Z.
- Amer. Geol.*—The American Geologist, a Monthly Journal of Geology and allied Sciences. (Minneapolis, 8vo.) Ng. (C) g. K. O.
- Amer. J. Anat.*—The American Journal of Anatomy. (Baltimore, 8vo.) (C) b.
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- An. Ac. Habana*—Anales de la real Academia de ciencias medicas, fisicas y naturales de la Habana. (Habana, 8vo.) N. R.
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- Ann. Mus. Congo*.—État indépendant du Congo. Annales du Musée du Congo, publiées par ordre du Secrétaire d'état. Série II. Zoologie. (Bruxelles, 4to.) Nz. K. R. Z. L. C.
- Ann. Mus. Genova*.—Annali del Museo civico di Storia Naturale di Genova. (Genova, 8vo.) Nz. K. Z. L. C, p. O.

- Ann. Mus. Hungar.*—Annales Musei nationalis Hungarici. (Buda-Pest, 8vo.) N. Z. C.
- Ann. Mus. Marseille*—Annales du Musée d'histoire naturelle de Marseille, Zoologie. (Marseille, 4to.) N. K. R. Z. L. C. O.
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- Ann. Naturphilos.*—Annalen der Naturphilosophie, herausgegeben von Wilhelm Ostwald. (Leipzig, 8vo.) K. C.
- Ann. N. York Ac.*—Annals of the New York Academy of Sciences. Late Lyceum of Natural History. (New York, 8vo.) N. K. R. Z. L. C, p.
- Annot. zool. Japon.*—Annotationes zoologicæ japonenses, auspiciis societatis zoologicæ tokyonensis. (Tokyo, 8vo.) Nz. K. R. Z. L. C, b.
- Ann. Queensland Mus.*—Annals of the Queensland Museum. (Brisbane, 8vo.) N. Z. L. (C) p.
- Ann. S. African Mus.*—Annals of the South African Museum. (Cape Town, 8vo.) N. Z. (C) p.
- Ann. Sci. nat.*—Annales des Sciences naturelles. Zoologie et Paléontologie. Huitième série. (Paris, 8vo.) Nz. K. R. Z. L. C, p. O.
- Ann. Sci. nat. Porto*—Annaes de Sciencias naturaes publicados por Augusto Nobre. (Porto, 8vo.) N. R.
- Ann. Scott. Nat. Hist.*—The Annals of Scottish Natural History: a quarterly magazine, with which is incorporated "The Scottish Naturalist." (Edinburgh & London, 8vo.) N. Z. L. C.
- Ann. Scuol. Agric. Portici*—Annali della R. Scuola superiore di Agricoltura in Portici. 2ª Serie. (Napoli.) C.
- Ann. Soc. Agric. Lyon*—Annales de la Société d'Agriculture, Histoire naturelle et Arts utiles de Lyon. Septième série. (Lyons & Paris, 8vo.) N. R. L.
- Ann. Soc. Belge Micr.*—Annales de la Société Belge de Microscopie. (Bruxelles, 8vo.) N. (C) p.
- Ann. Soc. Bruxelles*—Annales de la Société Scientifique de Bruxelles. (Bruxelles, 8vo.) N.
- Ann. Soc. Charente*—Academie de la Rochelle. Annales de la Société des Sciences naturelles de la Charente inférieure. (La Rochelle, 8vo.) N.
- Ann. Soc. ent. Belgique*—Annales de la Société entomologique de Belgique. [Called also Comptes-rendus.] (Bruxelles, 8vo.) Nz. Z. L. C. O.
- Ann. Soc. ent. France*—Annales de la Société entomologique de France. (Paris, 8vo.) Nz. K. R. Z. L. C.
- Ann. Soc. geol. Belgique*—Annales de la Société géologique de Belgique. [Consists of Bulletin and Mémoires.] (Liège, 8vo.) Ng. K. R. (C) p.
- Ann. Soc. geol. Nord*—Annales de la Société géologique du Nord. (Lille, 8vo.) Ng.
- Ann. Soc. Linn. Lyon*—Annales de la Société Linnéenne de Lyon. Nouvelle série. (Lyon, 8vo.) N. R. Z. L. C. O.

- Ann. Soc. malac. Belgique*—Annales de la Société royale malacologique de Belgique. [Consists of Mémoires and Bulletin, qq.v.] (Bruxelles, 8vo.) Nz. R. Z. L.
- Annuaire Mus. St. Petersb.*—Annuaire du Musée zoologique de l'Académie impériale de St. Pétersbourg. [Called also] Ezheghodnik zoologicheskagho muzeya imperatorskoï akademii nauk. (St. Pétersbourg, 8vo.) N. Nz. R. Z. L. C.
- Annuaire. Ac. Porto*—Annuario da Academia polytechnica do Porto. (Porto, 8vo.) N.
- Annuaire. Mus. Univ. Napoli*—Annuario del Museo zoologico della R. Università di Napoli. (Nuova Serie.) (Napoli, 8vo.)
- Ann. Univ. Jassy*—Annales scientifiques de l'Université de Jassy. (Jassy, 8vo.) K. R. Z. C, p.
- Ann. Univ. Kharkow*—Annales de l'Université de Kharkow [called also Zapiski imperatorskagho Khakovskagho Universiteta]. (Kharkow, 8vo.) (C) p.
- Ann. Univ. Lyon*—Annales de l'Université de Lyon. Nouvelle série. I. Sciences, Médecine. (Paris, 8vo.) N. R. C, p.
- Ann. Univ. Toscane*—Annali delle Università Toscane. (Pisa, 4to.) N.
- An. Soc. Argent.*—Anales de la Sociedad científica Argentina. (Buenos Aires, 8vo.) N.
- An. Soc. Espan.*—Anales de la Sociedad Española de historia natural. (Madrid, 8vo.) N. R. Z. C.
- Antanan. Ann.*—Antananarivo Annual and Madagascar Magazine. (Antananarivo, 8vo.) N.
- An. Univ. Chile*—Anales de la Universidad de Chile. (Santiago, 8vo.) N. C.
- Anz. Ak. Wiss.*—Anzeiger der k. Akademie der Wissenschaften. Mathematisch-naturwissenschaftliche Classe. (Wien, 8vo.) N. R. L. Z. C.
- Appalachia*—Appalachia: the Journal of the Appalachian Mountain Club. (Boston, 8vo.) N.
- Aquila*—Aquila a Magyar madártani Központ folyóirata. (Budapest, 4to.) Nz. Z.
- § *Arb. Biol. Abt. Land.-Forstwirtsch.*—Arbeiten aus der biologischen Abteilung für Land- und Forstwirtschaft am Kaiserlichen Gesundheitsamte. (Berlin, 8vo.) N. K.
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- Arb. Inst. Wurzburg*—Arbeiten aus dem zoologisch-zootomischen Institut in Würzburg. (Wiesbaden, 8vo.) Nz. K. R. Z. L. C, b. O.
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An asterisk prefixed to a quotation signifies that the Recorder has not
seen the journal or work referred to.

THE ZOOLOGICAL RECORD

FOR 1904.

I. GENERAL SUBJECTS.*

BY

D. SHARP.

CONTENTS.

Titles	Page 3		Page
Subject-Index			
I. TEXT-BOOKS, GENERAL WORKS, EVOLUTION, ESSAYS :—		IV. PHYSIOLOGICAL :—	
a. Works on Zoology, General text-books	56	a. General	65
b. Philosophical	56	b. Particular functions	66
c. Evolution	57	c. Colour and Pigment	66
d. Variation	58	d. Nervous and Sensory, Psychology	66
e. Adaptation, convergence, environment	58	V. PROTOPLASM AND CELL :—	
f. Selection, Protection	59	a. General	67
g. Ethology	59	b. Protoplasm	67
h. Phylogeny, Organogeny	59	c. Cell, structure & func- tion	67
i. Isolated questions	59	d. Nucleus, Nucleolus, Cen- trosome, etc.	68
k. Historical, biographical	60	VI. OVUM AND SPERMATO- ZOON :—	
l. Pedagogic and Popular	61	a. General	68
m. Nomenclature	61	b. Ovum, oogenesis	68
n. Taxonomy	61	c. Spermatozoon, sperma- togenesis	69
o. Museums, Methods, Eco- nomics	61	d. Maturation	69
p. Bibliography, Records	62	e. Fertilisation	69
II. GEOGRAPHICAL :—		VII. DEVELOPMENT, EMBRYO- LOGY, PARTHENOGENE- SIS :—	
a. General, Distribution	62	a. General	69
b. Expeditions	62	b. Particular species, stages and organs	71
c. Travels	63	c. Experimental	72
d. Faunas. Special Regions	63	VIII. REPRODUCTION, SEX, HE- REDITY, REGENERA- TION :—	
e. Plankton	64	a. General	73
III. MORPHOLOGICAL :—		b. Sex	73
a. General	64	c. Heredity	74
b. Histological	65	d. Regeneration, Grafting	75
c. Teratology	65		

* It will be understood that papers recorded here may also be found under the various classes, II—XVIII. They are included here because of their bearing on general questions, which, if not obvious, will be made apparent in the Subject-Index.

INTRODUCTION.

NEARLY 1000 works are included in this Record.

Two works of the most general character appeared in 1904. The second edition of WEISMANN'S work on evolution (927) as well as its translation by Prof. and Mrs THOMSON (928) we can merely mention; its chief theme being that characters, taken as the sign of evolution, must be born not acquired. There can be no doubt that, however open to criticism the system of this most talented Zoologist may be, it is of much value as tending to expose the term heredity to the critical consideration it so much requires.

WASMANN'S general work (919) is practically a new one though styled a second edition. From a philosophical point of view the work of the Revd. Father might be perhaps severely criticised, but his views so far as they go are frankly stated, and the work zoologically will be found very good, and easily intelligible.

There are several learned works on the zoology of the ancients, BURCKHARDT (155-158), STRUNZ (864). At the opposite extreme we find the memoirs of SPENGLER (851), ZIEGLER (971), KORSCHOLT (482) who utter words of caution as to the confusion created by those who consider they are correcting zoological words and taxonomical expressions by changing their orthography. It certainly seems undesirable that we should have current, Kephelopoda, Cephalopoda, Zephalopoda.

The emission of rays by living bodies is attracting some attention, CHARPENTIER (180); as is also the effect of radium and other rays, on organisation, SCHAPER (792), WILLCOCK (945) etc.

Much attention continues to be given to the subject of unconscious movement. BOHN (97) after elaborate experiments concludes that the periodic movements of *Convoluta* are to be ascribed to inherited memory. Apparently this differs from the old terms instinct and habit, inasmuch as it is associated with protoplasm. JENNINGS' work (446) gives the results of observations that have extended over a number of years. He considers that the reactions of the lowest organisms to stimuli are not entirely of the kind called tropisms, but are essentially of the same nature as the method of trial and error, and exhibit therefore the rudiments of intelligence. FOREL'S (294) discussion of animal psychology is remarkably concise and lucid, and deserves the attention of all who do not entirely neglect this branch of knowledge.

The first volume of the treatise on histology by PRENANT, BOUIN & MAILLARD (738) deals with cytology, and appears to be an important work: it is said to contain much new matter.

The relations of mitosis and amitosis are discussed by H. L. OSBORN (686); and CHILD urges (184) that a greater importance attaches to amitosis than is usually conceded.

The "individuality" of chromosomes has been discussed and criticised by both HÄCKER (358) & PETRUNKEWITSCH (719). HÄCKER is inclined to favour the term autonomy rather than individuality. But in discussing autonomy he makes the difficulties connected with the term tolerably evident. He says that sperm and germ cells do not mix but only conjugate, but we do not quite gather what sort of a process conjugation without mixing is believed to be. He puts in tabular form the chromosome morphology in the heredity of cross-breeds of three forms of Arthropods. PETRUNKEWITSCH (719), who also criticises Boveri expects—and with great reason—valuable results from an inquiry into the cytology of parthenogenesis.

Works on development are very numerous. YATSU (957) has experimented as to the existence of "definite specification" in the regions of the egg, and finds that it is initiated by the dissolution of the germinal vesicle. MARCHAL's paper on germinogony (586) deals with one of Nature's experiments of a most remarkable character, and having the widest bearings. The subject is evidently destined to become of much importance. It is treated by the author in an excellent manner. The memoir we have already alluded to of PETRUNKEWITSCH on artificial parthenogenesis, besides dealing with the cytological aspects, discusses briefly the relation of the phenomena with natural parthenogenesis. E. B. WILSON (949) informs us that in both Annelids and Molluscs development is to be regarded as a mosaic-work of self-differentiating cells; specific conditions being dependent on specific forms of protoplasm.

Sexual dimorphism and ornament has been discussed by LAMEERE (497). He traces it to equivalence of energy in the early condition of the two sexes, concomitant with inequal physiological division of labour. Many of his examples, as well as his treatment of apparently exceptional cases, are full of interest and ingenuity.

In addition to discussing the matter in his larger paper, PAUL MARCHAL has a shorter one on the determination of sex (587) in connection with polyembryony. MONTGOMERY (640) sets forth the superiority of the female sex.

Memoirs on heredity are extremely numerous. We owe to HÄCKER (358, 360) a clear exposition of the Mendel work, and a discussion of it in connection with recent cytology. CHILD (186) as the result of regeneration experiments concludes that heredity is a physiological not a morphological question. The brief note of PAUL ABRIC (5) will no doubt receive the attention it deserves. In it he complains—and probably not altogether without reason—of the metaphysical nature of the considerations that have been previously advanced. Is it certain that the "parasitic complex" he postulates (in this as well as in other of his notes) is altogether free from the taint he complains of? We may hope that it will become quite clear to us in what way the new "parasitic complex" differs from the old "environment."

The study of regeneration has also been very extensive. MORGAN (651) discusses the phenomena and suggests new terms for use in the subject. SCHULTZ (814) instructs us as to the general view we should take of the subject; and HOLMES (414) has a chapter on the factors in the regulation of form.

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II.—SUBJECT-INDEX.

1. GENERAL WORKS, including GENERAL TEXT-BOOKS, ESSAYS, EVOLUTION, ETC.

Special text-books are recorded under the subjects to which they refer.

a. General works on Zoology. General text-books:—

- Modern biology, general exposition, WASMANN (919).
General work, BRONN (146).
Animal Kingdom, general work, SCHULZE (817).
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b. Philosophical:—

- Philosophical biology, popular exposition, HAECKEL (362).
Biology and philosophy, KERSTEN (470).
Natural science and cosmical ideas, LADENBURG (494).
Conceptions and opinions, of Nature, DRIESCH (254).
Theoretical biology, Reinke's views, PLATE (726).

Nature of life, BARD (37).

"Mneme," principle in organic process, SEMON (828).

Neovitalism, MELDOLA (604).

Neovitalism and teleology, REINKE (757).

Mechanism and vitalism, MELZER (605).

Livingness in matter, ROBERTSON (774).

Vitality and chemical constitution, PRESCOTT (739).

The origin of life, HOOKHAM (417), ALLEN (11), SCRIBNER (827).

Species and their constancy biochemical, ABDERHALDEN (2).

The Ocean and its inhabitants, THOULET (874).

The Ocean, laws and problems, THOULET (875, 876).

Life in crystals, BRAZZA & PIRENNE (141).

Heredity and the cause of variation, BEARD (58).

Uncertainties, HOWORTH (418).

Race, and individual or association with it, PLOETZ (729).

Evolution and heredity, their nature, HUTTON (429).

c. Evolution:—

Evolution, METCALF (612) ; WEISMANN (927), translation by THOMSON (928).

Evolution, Metcalf's views, COOK (204).

Abstracts of numerous recent works on evolution, SCHRÖDER (809).

Abstracts of some recent Darwinistic works, GOLDSCHMIDT (333).

Evolution, the present position, SCHNEIDER (803).

Evolution criticism of theories, GERARD (315).

Evolution and natural selection, COOK (205).

Evolution not origin of species, COOK (203).

Controverted points, essays on, GIARD (319).

Evolution ; its orthodoxy etc., BORJA (115).

Ethics and evolution theories, ACHELIS (10).

Evolution and Kinetic hypotheses, DE BOISSOUUDY (110).

Goethe and evolution, LYELL (567).

Review of recent ideas, FRANCÉ (297).

Evolution morphological, and evolution chemical, DUCCESHI (264).

Darwinism, ERRERA (273), GUENTHER (350), SCHALLMAYER (791).

Modern Darwinism, FRANCÉ (298).

Plate's views on Darwinism, MEISENHEIMER (602).

Lamarckian and Darwinian views, RABL (747).

Origin of species, DASTRE (227)—Origin of species, modern views, TSCHERMAK (887).—Origin of species, Mendel's views, DARBISHIRE (226).

—Origin of species, botanical experiments, CORRENS (209).

Evidence of evolution, DE VRIES (245).—Mutations, evolution, DE VRIES (246).

Mutation theory ; duration of life on the earth, MOLL (629).

Mutation and selection, METCALF (611), and COOK (204).

Evolution, adaptation, mutations, MORGAN (653).

Divergence and environment, GULICK (351).

Evolution in man, ANTHONY (21).

Man and apes, MACNAMARA (579), SCHWALBE (821), UHLENHUTH (893).

Function and evolution, RABL (747).

Psychodiatema (or mind, or nervous system) in evolution, BARATONO (35).

Evolution of Vertebrates, WOODWARD (956).

Horse, evolution and ancestry, OSBORN (684).

Orthogenesis, egg-cases of fishes, DEAN (235).

Opisthenogenesis, law of development or movement of colour etc., PACKARD (693).

Origin of life, KOENIG (476).

Marine origin of life, QUINTON (743, 744), DE VARIGNY (897).

Plurality of inhabited worlds, WALLACE (914).
 Account of book by Laloy, ZANDER (965).
 Extinction, geological, of species, ABEL (3).
 Evolution of sex ornament, LAMEERE (497).
 Changes in habitat etc., pœcilogony, BOHN (102).
 Recent modification of Alpine fauna, CORCELLE (207).
 Anabolism, results of distinctions in, CRAMPTON (215).

d. Variation:—

Variation, ABRIC (7).—Variation etc., botanical, TSCHERMAK, E. (888).
 Variation, kinds of and nature of, HICKSON (407).
 Mutation theory, HUBRECHT (419).—Mutation, see also c.
 Mutations and species, *Crustacea*, BOUVIER (125).
 Correlative variation in numerous individuals and species, KREMPF (488).
 Progressive reduction of variability, Rosa's views, PLATE (728).
 Dimorphic forms, and species, COUTAGNE (124).
 Variation acquired and inherited, selection of small distinctions, COUTAGNE (211). See also f.
 Statistical methods, variation etc., DAVENPORT (231).
 Skew variation, LUTZ (565).
 Variation in human skull, races, SERGI (829).
 Variation of cranial bones, man, LE DOUBLE (510).
 Numerical variation, vertebræ, man, BARDEEN (38).
 Variation in Insects with discussion of general points, KELLOGG & BELL (465).
 Polymorphism and variation, ants, FOREL (294A).
 Physiology of variation, *Lepidoptera*, VON LINDEN (530, 531).
 Variation and selection in a Saturniid moth, CRAMPTON (217).
 Comparative variation of drones and worker bees, LUTZ (566), & PHILIPPS (723).
 Variation in Mollusca, definition and ætiology, BELLINI (66).
 Variation, rays of *Pecten*, DAVENPORT & HUBBARD (232).
 Variation, *Helix*, LANG (498).
 Variation, shell of *Neritina virginea*, METCALF (610).
 Variability and autotomy, *Phataria*, MONKS (637).
 Variation, *Pyramidula*, biometric, COLLINS (197).
 Aetiology of variation, *Anurea*, LAUTERBORN (506).
 Variation in teeth on Arachnid claws, HARTMANN (380).
 Seasonal polymorphism, *Daphnia*, experiments, OSTWALD (689).
 Variation, statistical, mathematical, correlative, hooks of *Tenia*, STEVENSON & ENGBERG (861).
 Variation and correlation, *Lumbricus*, dimensions and number of somites, PEARL & FULLER (703); *Arcella*, shell, iid. (702).
 Variation, measurements, *Phylloclactylus*, CAMERANO (167).
 New York Devonian, indigene and alien faunas; CLARKE (191).

e. Adaptation, Convergence, Environment:—

Adaptation, GANONG (309).—Adaptation, colour, HARGITT (373, 374).
 Degeneration and adaptation, LENDENFELD (516).
 Environment factors, PEIRCE (711).
 Digestive apparatus and alimentary regime, SPIESS (853).
 History of eye of *Amblyopsis*, EIGENMANN (270).
 Ear of *Phocæna*, BOENNIGHAUS (90).
 Direction of hair, WHIPPLE (937).
 Marine respiration, BOUNHIOL (124).
 Adaptation of egg-capsule of *Chimæra*, DEAN (235, 236).
 Convergence, theory, FRIEDMANN (301).

f. Selection and Protection:—

Correlation of characters and selection, COUTAGNE (212).

Selection and mendelian crosses, COUTAGNE (213).

Value of distinctness of species, HAMEBURGER (368).

Unimportant characters that are specific, PETERSEN (718).

Value of small variations, EHRENFELS & PLATE (269), HOFFMANN (412).

Immobility, as protection, PIÉRON (725).

Selective elimination, WELDON (931).

Value of colour, *Mantis*, CESNOLA (179).

Protective coloration, GREEN (341).

Variation and elimination—fitness—in *Lepidoptera*, CRAMPTON (216).

Autotomy and natural selection, GLASER (326).

Selection and the spongy tissue of bones, LENDENFELD (518).

Selection multi-nippled sheep, BELL (65).

g. Ethology (incl. Phænology):—(See also 4 d.)

Animal societies, METSCHNIKOFF (613).

Symbiosis and parasitism, 4 categories incl. Epocumeni, ARIOLA (25).

Parasitism, origin of, FAUSSEK (280).

Culicidæ and their parasites, DYÉ (268).

h. Phylogeny, Organogeny (phyletic):—

[Only the wider phylogenetic speculations are here included. References to those limited to single classes should be sought for in the corresponding Records.]

Organogeny, and phylogeny, GINESTE (325).

Palæontology and zoology, HESCHELER (406).

Invertebrate phylogeny, HUBRECHT (420).

Origin of Mammals, FÜRBRINGER (305).

Phylogeny and taxonomy, *Marsupialia*, BENSLEY (68).

Phylogeny of *Annelida*, *Chordata*, *Ctenophora*, *Platyhelminthes*, HUBRECHT (421).

Phylogeny of *Annelida*, WOLTERECK (953).

Phylogeny *Tunicata*, JULIN (451).

Amphioxus, organ of sight, phylogenetic bearing, BOVERI (128).

Dorsal cord, phylogeny and morphology, KEMNA (467).

Lungs, origin of, GOETTE (330).—Phylogeny of lung, WIEDERSHEIM (942).—Phylogeny of lungs etc., Vertebrates, SPENGEL (852).

i. Isolated questions:—

Degeneration, physiology of, CLAVET (192).

Senility, histology of, MARINESCO (592).—Senility, see also 4 a.

Left-handedness, recent work, MERKEL (606).

Animal light, DUBOIS (256).—Phosphorence, BAGE (30).—Luminescent structures, of a glow-worm, recent bibliography, TOWNSEND (884).

Mimicry, ENTZ (272), PACKARD (694).—Leaf-mimicry, fish, WILLEY (946).

Cave life, VIRÉ (906).

Coral reefs, GARDINER (312).—Coral reefs, Funafuti, SOLLAS (843).

Deep-sea life, WITTEN (952).

Telegony, guinea-pig, negative, MINOT (622).—Telegony, DARBISHIRE, *Biometrika* iii, p. 51.

Beauty and muscular activity, KIDD (471).

Spontaneous generation, RICHET (770).

Heterogenesis, BASTIAN (48, 49).—Heterogenesis, review of Bastian's studies, J. A. T., *Nature* lxi, pp. 385–387.

Sea-serpent, L'EOST (519).

k. Historical and biographical:—

Ancient biology, BURCKHARDT (158).—History of ancient biology, STRUNZ (864).

Prae-Aristotelian systems, BURCKHARDT (155).

Aristotle, the first book of his system, BURCKHARDT (156).

The biology of the Greeks, BURCKHARDT (157).

Rhuphos and Galenos, anatomical views of, VON TÖPLY (880).

Leonardo da Vinci and M. A. della Torre as anatomists, FORSTER (296).

History of Palæontology, forty years, WOODWARD (955).

Horse in Europe, earliest history, ZABOROWSKI (961).

Recent history, biology, LOEB (537).

Embryology, early history, BLOCH (87, 88).

Eighteenth century, evolutionists, Diderot, Herder, Monboddo, LOVEJOY (558).

Historical as to instinct, ZIEGLER (970).

Lamarck & Geoffroy, letter by, DEAN (237).

Gossip about Lamarck, B. D., *Science* xx, pp. 811, 812.

Haeckel, E. (363), *Festschrift* 70th birthday.—Haeckel, BREITENBACH (143), HERTWIG (402), LOISEL (556).

Krempf, receives the Prix Savigny, C.R. Ac. Sci. cxxxix, p. 1098.

Weismann, A. (929), *Festschrift* 70th birthday.—RAWITZ (749).

Commerce in foreign animals, 16th century, Marseilles, HAMY (369).

Mummied animals of ancient Egypt, SCHLOSSER (795).

Sepulchral, latin, animals, MARCHI (589).

Wolff, K. F. and his ideas, WALDEYER (912).

W. J. Burchell and his collections, POULTON (735).

André Sniadecki, centenary, his views, LAGOWSKI (495).

Some Scottish Naturalists, HARVIE-BROWN & MACPHERSON (386).

Popular errors in Guatemala, RODRIGUEZ (775).

Measures against *Anopheles* in antiquity, MANZI (583).

Allman, George James, H. (357).

Beecher, Charles Emerson, JACKSON (433).

Brown-Séguard, BERTHELOT (74).

Budgett, John Samuel, *Nature* lxi, p. 300.

Edwards, Henri Milne, BERTHELOT (73).

Evans, Henry, obit., *Nature* lxx, p. 327.

Fea, Leonardo, biography, GESTRO (318) and PARONA, *Atti Soc. Ligustica* xiv, pp. 304–308.

Fickert, Karl, Rudolf, Dietrich, VON LINDEN (529).

Filhol, Henri, biography with portrait and list of writings, PETTIT (722).

Flower, Sir William, CORNISH (208), M. (573).

Gegenbaur, Carl, G. (306), GORKA (338), also notice by BÜTSCHLI, pp. 405–409, *Zool. Zentrbl.* 1904.

His, Wilhelm, obit., *Nature* lxx, p. 58.—Biography, KOLLMANN (478).

Kowalevsky, A., VAYSSIÈRE (900).

Lacaze-Duthiers, Henri de, H. (356).—Paris Museum, Lacaze-Duthiers and others, historical and biographical, JOUBIN (450).

Marey, E. J., obit., *Nature* lxx, p. 57.

Mivart, St. George J., H. (355).

Nicholson, Henry Alleyn, M. (572).

Raspail, F. V., BLANCHARD (83).

Spencer, Herbert, autobiography (850).—Spencer, Herbert, relation to Darwin & Weismann, SHARP (833).—Herbert Spencer & C. Renouvier, MICHEL (618).

Zittel, Karl Alfred von, OSBORN (685), POMPECKJ & BÜTSCHLI (734), A. S. W., *Nature* lxi, pp. 253–255.

1. Pedagogic and popular:—

- Biology in higher schools, discussion, KRAEPELIN and others (487).
 Biology in German High Schools, LAKOWITZ (496).—Nat. Science in German High Schools, NORRENBERG (674).
 Teaching biology in secondary schools, LLOYD & BIGELOW (535).
 The treatment of systematic zoology for pedagogy, ZIEGLER (972).
 Nature study, HILL & WEBB (409), MIALI (617).
 Value of evolution in education, LE DANTEC (508).
 The teaching "origin of species" in schools, DAHL (220), PLATE (727).
 Conference of science teachers, Nature lxi, pp. 282-284.
 Diagrams for schools, SCHOENICHEN (804).
 Collegiate course, zoology, BIGELOW and others (79).
 Zoology in medical schools, BRAUN (139).
 Beauty of marine fauna, LANG (499).
 Popular Natural History, DAVIS (233).
 Popular, LATTER (505).—Wild Nature, KEARTON (457).
 Domestic animals, natural history of, KELLER (459).

m. Nomenclature:—

- Nomenclature, PALMER (696).
 Names omitted from nomenclators of genera, WATERHOUSE (922).
 Nomenclature and classics, CLEMENTS (193).
 System of revised rules of nomenclature, MAEHRENTHAL (580).
 Rules and recommendations, international code, POCHE (730).
 The types of genera, DYAR & CAUDELL (267).
 Citation of types of new genera, COCKERELL, p. 407, Science xx.
 Uniform names for the Orders of *Insecta*, SHIPLEY (835).
 Early, 1758, literature and nomenclature, POCHE (731).
 A, 1758, forgotten work, POCHE (732).
 Corrections orthographical, KORSCHOLT (482), SPENGEL (851), ZIEGLER (971).
 Vernacular names, GILL (323).

n. Taxonomy:—(See also h).

- Taxonomy and morphology, *Arthropoda*, LANKESTER (502).
 Classification of *Arachnida*, LANKESTER (503).
 Blood precipitin and affinity, NUTTALL (678, 679).
 Koic and Kuidic systems before Aristotle, BURCKHARDT (155).

o. Museums. Methods. Economical:—

- Museums, with numerous plates, BATHER (55).—Museums, GRATACAP (339); cases, etc., MEYER (615).
 Management of Museums, HARMER (375).
 Japan biological station, DEAN (234).
 British Museum, historical, LANKESTER (504).
 Millport Marine Biol. Station, LINDSAY (533).
 Burchell's African and S. American collections, POULTON (735).
 The Sutton-Broad Laboratory, Tr. Norfolk Soc. vii, pp. 731, 732, illustrations.
 London Zoological Gardens, official guide, MITCHELL (627).
 Mathematics in biology, PICARD (724).
 Skew frequency curves, KAPTEYN (454).—Dimorphic curves, HELGUERO (387).
 Somatometric method, CAMERANO (166).
 Statistical methods, Sheppard, Safford and others, PEARSON, Science xx, p. 765.
 Oceanography, MONACO (633, 635, 636).

Oceanography near shore, THOULER (877).
 Handbook microscop. technique, 5th ed., BÖHM (92).
 Photo-micrography, and micrometry, THOMSON (872).
 Piscicultural apparatus, Regulation of temperature, VIGUIER (903).
 Use of low temperatures for research, MACFADYEN (578).
 Distilled, and artificial sea-water, LYON (568).
 Cement for fastening alcoholic jars, DE GROOT (345).
 Storing microscopic slides, MARLATT, *Science* xx, pp. 925, 926.
 Report on economic zoology, THEOBALD (870).

p. Bibliography and Records:—

International Catalogue of Sci. lit., Zoology 1901, MINCHIN (620).
 International Catalogue, criticism, SCLATER (823).
 Literature of 1903, SHARP and others (831).
 Records of zoology for parts of years 1900, etc., WELTNER (932).
 Bericht of Zoological biology 1903, MAYER (598A).
 Lists of titles, FIELD (288).
 Annual review of Zoology, CAULLERY & MESNIL (175).
 Summary of work on anatomy and development, chiefly 1903, MERKEL & BONNET (607).
 Record of anatomy and development, Vertebrate, SCHWALBE (820).
 Bibliography of anatomy and development, Vertebrate, 1892-1901, E. SCHWALBE (819).
 Literature of anatomy 1903, 1904, HAMANN (367).
 Record of Physiology, 1903, HERMANN (397).
 Recent Russian literature, summary in German, STIEDA (862).
 Bibl. Canadian zoology, 1902, WHITEAVES (938).
 Bibliography of Brazilian Palæontology, BRANNER (136).

2. DISTRIBUTION, EXPEDITIONS, TRAVELS, PLANKTON.

a. General:—

Zoogeography, JACOBI (435).
 Geographical Distribution, recent advances, ORTMANN (683).
 Climate and Distribution, WALKER (913).
 The two chief faunas, PACKARD (692).
 Local distribution, BROWNE (147).
 Where did life originate, SCRIBNER (827).
 Original home of man, Klaatsch and Schoetensack theories, RHUMBLER (763).
 Distribution of marine animals, M'INTOSH (625).
 Distribution of marine larvæ, GARDINER (311).
 Bipolarity and distribution of *Bryozoa*, CALVET (165).
 Antarctic fauna, ? bipolarity, PELSENEER (712).
 Antarctic Continent, Archiplata, BLASCHKE (85).
 The Wallace and the Weber limits between Asia and Australia, PELSENEER (713).
 Distribution of *Mollusca*, SIMROTH (838).
 Subterranean fauna, France, VIRÉ (905).
 Extinction in England, WEBB, MCDAKIN & GRAY (923).

b. Expeditions:—

Arctic polar expedition, BÉNARD (67).
 "Belgica" exp., BELGICA (64).—"Belgica"; account of parts published before 1904, W. H. DALL, *Science* xix, pp. 656-658.

Zoology of Lake Baikal, KOROTNEFF (481).

German South polar expedition, GAZERT (314).

"Harriman" Alaska exp., MERRIAM (608).

"Humboldt" Plankton Expedition, Atlantic, HENSEN (392).

"Maja" Deep sea, LO BIANCO (536).

"Princesse Alice" 1903; RICHARD (767, 768), MONACO (634).—Princesse Alice II; Gulf of Gascony, MONACO (631).—Prince of Monaco's yacht, MONACO (632).

"Princeton" exp. Patagonia, SCOTT (824).

"Siboga" exp., WEBER (924).

"Valdivia" exp., CHUN (190).

White Nile and Egypt, Swedish expedition, JÄGERSKIÖLD (436).

c. Travels :—

Borneo, BECCARI (63).

Hokkaido, Japan, KLOCKE (474).

Guianas, ANDRE (18).

Mafia, Zanzibar, the Comores, VOELTZKOW (907).

d. Faunas. Special Regions :—

Neolithic fauna, Central Europe, SCHOETENSACK (805).

Changes in fauna of Alps since glacial period, SCHULZ (816).

Arctic Fauna, RÖMER & SCHAUDINN (779).

Faroe islands, ANNANDALE (20).

Scotland, Highlands of, HARVIE-BROWN & MACPHERSON (386).

Marine fauna Northumberland, MEEK (600).

Cambridgeshire, British Ass. Guide, MARR & SHIPLEY (594).

Plymouth marine invertebrate fauna, (591).

Alpine fauna and flora of the Ardennes, FREDERICQ (299).

Fauna of Lake Léman, FOREL (295).

Fauna of Canton Tessin, KELER (458).

Fauna of valley in Southern Alps, PAVESI (699).

Capri marine Fauna, LO BIANCO (536).

Fauna of Adriatic Sea about Triest, RÖMER (778).

Salt lakes, Roumania, BUJOR (152).

Fauna of Cephalonia, SANGIORGI (789).

Ponto-Aralian-Caspian special province, SOWINSKY (846).

Indian and Atlantic Oceans, recent work, KULCZYCKI (489).

Maldives and Laccadives, GARDINER (310), review, *Nature* lxx, pp. 337, 338.

Ceylon, marine biology, HERDMAN & others (396).

Indo-China, Fauna, PAVIE (700).

Philippines, note on a general work, by ELERA, DYAR, pp. 57, 58, *J. N. York Ent. Soc.* xii.

Fauna Hawaiiensis, SHARP (832).

Biology of a coral-island, SCHNEE (799).

Fauna of the Marschall islands, SCHNEE (798).

New Zealand, HUTTON & DRUMMOND (430).

Fauna of New Zealand, complete list, with dissertation, HUTTON (428).

Moss-fauna Antarctic, RICHTERS (771).

Alaska, OSGOOD (688).

Central America, GODMAN (329).

South polar fauna, VANHÖFFEN (896).

Falkland islands, chiefly *Aves*, VALLENTIN (894).

Cretaceous fauna, Ekaterinoslaw, chiefly *Mollusca*, FAVRE (281).

N. S. Wales, Cretaceous Invertebrates, ETHERIDGE (274).

Solenhofen fossil fauna, WALTHER (917).

Palaeontology etc. of Brazil, BRANNER (136).

e. Plankton, and Oceanic Zoology:—Oceanography see 1 o.

Plankton net, BRUCE (148).—Two Plankton nets, RICHARD (769).

Vertical movement of Plankton, Baltic lakes, ZACHARIAS (962).

Plankton North Sea, REDEKE & BREEMEN (752).—Northern Seas, KNUDSEN (475).—Atlantic, Mediterranean Red Sea, CLEVE (194).

Inland waters, value of thorough investigation, ZACHARIAS (963).

Plankton of Arctic lakes, SKORIKOW (839).—Plankton of Lake Seeliger, Volga, ZYKOFF (974).—Plankton of Danish Lakes, WESENBERG-LUND (934).

Summer Plankton, Newa and Lake Ladoga, SKORIKOW (840).

Freshwater Plankton, Lac de Bret, LINDEN (532).—Italian Alpine lakes, MONTI (643).—Alpine lakes, Tyrol, BREHM & ZEDERBAUER (142).

Elevated Lakes, Rocky Mountains (chiefly *Crustacea*), WARD (918).

Plankton of Seim River (Dnieper), ZYKOFF (973).—Of Murgab River, Turkestan, MEISSNER (603).

Plankton of pools, Germany, ZACHARIAS (964).

3. MORPHOLOGY.**a. General :—**

Only a few of the anatomical papers of the year are included here : others may be found in the Special Records. For a list of Anatomical Records see 1 p.

Place of Morphology in Zoology, MAGGI (581).

Record of anatomy and development, Vertebrate, SCHWALBE (820).

Anatomical views of RHUPHOS & GALENOS, VON TÖPLY (880).

Recent Russian literature, anatomy, STIEDA (862).

Animal size and form, KEMNA (466).

Morphology and other sciences, DAVENPORT (230).

Text-book Comparative Anatomy, HALLER (366).

Text-book of dissection, JAMMES (437).

Anatomy of frog, GAUPP (313).

Anthropology, morphology, Vertebrates, DUCKWORTH (265).

Anatomical nomenclature, BARDLEBEN (41).

Anatomical nomenclature, old terms, BERT & PELLANDA (71).

Segmentation, origin of, SCHNEIDER (202).

Metamerisation and the cephalisation of *Annelida*, MALAQUIN (582).

Germ-layers in regeneration, MORGAN (649).

Symmetry and asymmetry, bilateral animals, DUNCKER (266).

Asymmetry, JENNINGS (447).

Circular form, acephalous Molluscs, ANTHONY (22).

Gonads and mesoderm, *Ctenophora*, SCHNEIDER (801).

Morphological superiority of female, MONTGOMERY (640).

Skeleton, recent work, BARDLEBEN (40).

Articulation of jaw, comparative anatomy, KJELBERG (473).

Face and brain, Man and Apes, STRATZ (863).

Bones of foot, Primates and Man, VOLKOV (911).

Morphology and classification of *Arthropoda*, metamerism, etc., LANKESTER (502).

Morphology of head in *Insecta*, HOLMGREN (416).

Morphology of central ganglion, Tracheata, HALLER (365).

Digestive system, recent work, OPPEL (680).

Organ of sight, recent work, KALLIUS (452).

Vitreous body, development and morphology, KÖLLIKER (477).

Cerebral dorsal structures lower Vertebrates, morphology and function, KEMNA (468).

Peripheral nervous system, SCHULTZE (815).

Reissner's fish-like Vertebrates, SARGENT (790).

b. Histology:—

General treatise on histology, PRENANT, BOUIN & MAILLARD (738).

SCHNEIDER remarks on his book on histology (800).

Comparative histology, Vertebrates, atlas, LÖWENTHAL (559).

The neuron theory, LEVI (523).

The ganglion-cell, historical, BETHE (76).

Neuroglia, RUBASCHKIN (783).

Histology, glands and ducts male reproductive system, *Vertebrata*, OPPEL (681).

Digestive system, *Polychæta*, *Lagis*, BRASIL (137).

Red blood-corpuscle, recent work, WEIDENREICH (926).

Histology of muscle, PRENANT (737).

Comparative histology cartilage-cell, CHATIN (183).

Ramified cartilage, CHATIN (182).

Softening chitin for sections, METALNIKOFF (609).

Fixation, Protamin, BERG (69).

Histology of testis, see 6 c.

c. Teratology:—

The anatomy of particular monsters is not included.

Teratology and development-mechanics, NEUMANN (671), GOLDSTEIN (335).

Ideas as to Teratology, RABAUD (745).

Teratology of head and limbs, acrometagenesis, BABÈS (27).

Compound monsters, TUR (889).—Polygerminal monsters, TUR (891).—Double monsters, WILDER (943).—Double monsters with cyclopic defect, SPEMANN (849).—Experimental cyclopic *Triton*, SPEMANN (849).

Double formations, *Lumbricidæ*, KORSCHKE (483).

Hyperplasy, stag-horns, BOTEZAT (117).

Dwarfs, recent work, WINDLE (950).

4. PHYSIOLOGICAL.

a. General:—

Record of physiology 1903, HERMANN (397).

Chemical biology, treatise, CARRACIDO (171).

Physico-chemical methods in biology, HENRI & LARGUIER (390).

Chemical activity of organisation, HERZOG (405).

Chemotaxis, RABES (746).

Vitality v. matter, BETHE (75).

Influence of light, specially chemical, HERTEL (398).

Light and absence of light, effects, VIRÉ (904).

Life and electricity, WALLER (916).

Physical chemistry, cell and tissues, PAULI (698).

Organic chemistry, vital products, MELDOLA (604).

Life in an atmosphere of hydrogen, MARCACCI (584).

Rhythm, in the animal kingdom, UEXKÜLL (892).

Erepsin in all tissues, VERNON (901).

Muscle-plasma, characters in the classes of animals, PRZIBRAM (741).

Increase of weight, STEFANOWSKA (855).

Growth and senility, HENRI & BASTIEN (391).

Senility, causes of, LORAND (557).

Alteration of colour, size etc. experimentally, VON LINDEN (531).

Metabolism, DESCHAMPS (243).

Metabolism and autolysis, Testes and Spleen, LEVENE (520).—Pancreas, Liver and Spleen, LEVENE (521).

Radioactivity of organisms, TOMMASINA (879).

Emission of N rays; CHARPENTIER (180), DUBOIS (255).

Action of radium, lower forms of life, WILLCOCK (945).

Becquerel rays, BAEYER (29).

Past conditions influencing movements, *Rana*, BOHN (107).—Past conditions and inanition, BOHN (108).

Influence on organism of interstitial gland, testis, ANCEL & BOUIN (10–17). See also 8 b.—Genital poisons, LOISEL (550), poisons in eggs, LOISEL (551).

Inanition and metamorphosis, BOHN (99).

Hunger and diminution and degeneration, *Planaria*, SCHULTZ (813).

Injury giving rise to sebaceous glands, RIBBERT (766).

Parthenogenesis, see 7 a.

b. Particular Functions:—

Movement, ciliary, automatic, ABRIC (6).

Comparative phys., liver, DEFLANDRE (238).

Tegument of Arthropods as producing sugar, MIRANDE (626).

Ear, conduction of sound, BOENNIGHAUS (90).

Muscular contraction, MARCEAU (585).

c. Colour and Pigment:—

Coloration of living matter, RŮŽIČKA (785).

Colour in the animal kingdom, JACOBI (434).

Colour, and selection, HARGITT (373).

Colour physiology *Crustacea*, GAMBLE & KEEBLE (308).

Pigmentation, SCHIEDT (794).

The problem of pigmentation multiple, ABRIC (4).

Coloration, mammals and birds, BONHOTE (111).

Iridescent and metallic coloration, birds and insects, BIEDERMANN (77).

Winter-whitening of Vertebrates, BARRETT-HAMILTON (44).

Chromoblasts, *Torpedo*, CAVALIÉ (177).

d. Nervous and Sensory: Psychology:—

Physiology of nervous system, review, FREDERICQ (300).

Change of function in sense-organ, T. BOVERI (128).

Instinct, historical account, ZIEGLER (970).

Comparative psychology, present status, MILLS (619).

Animal psychology, WASMANN (920), ZELL (968).

Mind in animals, VASCHIDE & ROUSSEAU (899).

Soul and intelligence, man and animal, SCHUSTER (818).

Association of ideas, apes, VASCHIDE & ROUSSEAU (898).

Psychology of invertebrates, BOHN (93).

Psychology—maternal affection—*Arachnida*, LÉCAILLON (507).

Love in animals, COUPIN (210).

Insect psychology, FOREL (294).

Behaviour of lower organisms, JENNINGS (446).

Orientation, at a distance, BONNIER (113).—Orientation, pigeon, THAUZIES (869).

Orientation in connection with tide, BOHN (94).

Sense of equilibrium, *Gonionemus*, MURBACH (665).

Position and tropisms, BOHN (100).—Anhydrobiosis and tropisms, BOHN (95, 101), DUBOIS (257).

Inherited memory, protoplasm of *Convoluta*, BOHN (97, 98).

Reactions of Planarians, PEARL (701).—Of *Corymorpha*, TORREY (881).

- Heliotropic reactions, *Crustacea*, LOEB (547).
 Electric and photic stimuli, *Gonionemus*, reaction-time, YERKES (958).
 Reactions, *Sagartia*, TORREY (882).
 Electricity, reactions of *Mnemiopsis*, HUNTER (425).—Electricity, reactions, *Polyorchis*, BANCROFT (34).
 Phototropism, BOHN (96).
 Rheotropism, fishes, LYON (570).

5. PROTOPLASM AND CELL. See also 6.

a. General:—

- Treatise on histology, Vol. i, Cytology, PRENANT, BOUIN & MAILLARD (738).
 Annual review of Cytology, HENNEGUY (388).
 Morphology and biology of the cell, general work, GURWITSCH (352).
 Cell and cell-division, GURWITSCH (353).
 Cell-life and cell-mechanics, RHUMBLER (762).
 The cell; histology, syncytium, ROHDE (777).
 Kinds of cells, HOLMGREN (415).
 Cell-connections, SCHUBERG (810).
 Cell-physiology, Echinoderm egg, ZIEGLER (969).
 Micro-chemistry of cells, MACALLUM and others (576).
 Individuality of chromosomes; centrosome, cell-processes, parthenogenesis, PETRUNKEWITSCH (719).
 Cells and environment, QUINTON (742).
 Cytology and heredity, HÄCKER (358), MONTGOMERY (641).
 Rejuvenation, the process, heredity and sex, MINOT (623).
 Cytology of parthenogenetic eggs, *Mactra*, KOSTANECKI (484).
 Physical imitations of vital activities, JENNINGS (448).
 Temperature and mitosis, JOLLY (449).
 Degeneration in *Actinosphaerium*; ætiology of tumours, R. HERTWIG (404).
 Lines of force and chains of force in karyokinesis, HARTOG (385).—
 Cellular fields of force, magnetic models, HARTOG (384).
 Diffusion; fields of force, LEDUC (511).
 Transformation of somatic into reproductive tissue, FARMER (277).

b. Protoplasm:—

- Protoplasm, experiments on, GREELEY (340).
 Protoplasm, physiological properties, HARRIS (378).
 Structure of protoplasm, *Vorticellidæ*, FAURÉ (279).
 Protoplasm and chemotaxis, BARRATT (43).
 The fluidity of protoplasm, SIMROTH (836).
 Structure of protoplasm in leucocytes, SAINT-HILAIRE (786).
 Cell-protoplasm, histology, VON BERGEN (70).
 Immortality? of protoplasm; effect of conjugation, CALKINS (163).
 Artificial protoplasm, RENAUDET (758).
 Protoplasm and the constituents of the Ocean, MACALLUM (574, 575).

c. Cell, structure and function:—See also 3 b, and 6.

- Cell-process, RHUMBLER (764).
 Dynamics of mitosis, GALLARDO (307).
 Amitosis and mitosis in insect ovary, DAIBER (221).
 Amitosis, egg-follicles, *Insecta*, KELLOGG (463).—Amitosis in regen. *Lepidoptera* pupa, HIRSCHLER (411).—Amitosis, *Moniezia*, CHILD (184).—
 Amitosis in embryo of *Fasciolaria*, H. L. OSBORN (686, 687).
 Division of *Flagellata*, FOÀ & GRASSI (293).

Mitochondria, Chondromites, Spheres, structure and formation, ROHDE (776).

Chromidial threads in actively functioning somatic cells, GOLDSCHMIDT (331, 332).

Cytology, parasitic Infusorian, LÉGER & DUBOSCQ (515).

Mitosis in malignant growths, BASHFORD & MURRAY (46, 47), FARMER & HANSEMAN (278), MURRAY (666).—Heterotype cell-division in malignant tumours, HÄCKER (361).—Heterotype division and malignant tissue [translation of FARMER, MOORE & WALKER, Zool. Rec. 1903, Gen. Sub. (232)], Biol. Centrbl. xxiv, pp. 1-7.

d. Nucleus, Nucleolus, Centrosome, etc.:—(See also 6):

Chromosomes, structure and individuality, BAUMGARTNER (56).

Chromosomes, their individuality; centrosomes, historical, cytasters, PETRUNKEWITSCH (719).

Nucleus and formation of chromosomes, soma, plants, GRÉGOIRE & WYGAERTS (342).

Centrosome, ARIOLA (24).

Cleavage centrosome of various origin, CONKLIN (200).

Cytasters and centrosomes in artificial parthenogenesis, WILSON (948).

Excretion, nuclei Gasteropod embryo, GLASER (327).

6. OVUM AND SPERMATOZOON.

a. General:—(see also 7 and 8):

Significance of segmentation of fecundated egg, BRACHET (132).

The cytology of cross-breeding, HÄCKER (358).

Chromosomes, reduction, division, nature and import, Montgomery's views, HÄCKER (359).

Maturation and fertilisation, egg of Axolotl, JENKINSON (445).

Oogenesis, maturation, and early mitosis, *Planaria*, MATTIESEN (597).

Oogenesis and spermatogenesis, chromosomes, *Planaria simplissima*, STEVENS (860).

Maturation and fertilisation [botanical] *Pinus*, FERGUSON (283).

Polyspermy, merocytic nuclei, culture of spermatozoa, LABBÉ (492).

b. Ovum and oogenesis:—

Ovum and oogenesis, *Onychophora*, BOUVIER (126).

Cytology ovum, origin of germ cells, *Myzostoma*, CARAZZI (178).

Oogenesis, ovarian epithelium, histolysis etc., GRUVEL (348).

Development of chromosomes, Selachian egg; MARECHAL (590).

Oogenesis, Balbiani's nucleus, HOLLANDER (413).

Egg of mammals, *Vesperugo*, VAN DER STRICHT (895).

Oogenesis, *Delphinus*, PALADINO (695).

Oogenesis, *Clemmys*, MUNSON (664).

Oogenesis, *Proteus*, SCHMIDT (796).

Ovum of *Petromyzon*, LUBOSCH (560).

Chromosomes, oocyte, *Triton*, JANSSENS (441).

Oocyte, perinuclear plasma, GIARDINA & MONTGOMERY, p. 310, Monit. Zool. ital. xv.

Oogenesis, *Cynthia*, BLUNTSCHLI (89).

Vitelline body, spider eggs, NOWLIN (675).

Oogenesis in social *Hymenoptera*, BRUNELLI (150).

Oocyte, *Insecta*, and perinuclear zone, GIARDINA (322).

Follicular epithelium and nutrition of egg, *Melolontha*, MOLLISON (630).

Oogenesis, parthenogenetic *Aphidæ*, polar bodies, chromosomes, STSCHEL-KANOVZEW (865).

- Oogenesis, *Branchellion*, PÉREZ & GENDRE (715).
 Oogenesis, *Sagitta*, STEVENS (859).
 Oogenesis, *Porifera*, GÖRICH (337).
 Corpus luteum, JANKOWSKI (438).—Mammals and Anamniota, LUBOSCH (561).—Histology and function, COHN (196).
 Degeneration of ovules, *Dytiscus*, DUBUISSON (263).

c. Spermatozoon, Spermatogenesis:—

- Interstitial cells and spermatogenesis, BRANCA (133).
 Interstitial gland, testis, ANCEL & BOUIN (17).—Interstitial tissue of testis, horse, BOUIN & ANCEL (121).—Interstitial cells of testis, LOISEL (554).—Interstitial gland?, testis, LOISEL (552).
 Absorption of spermatozoa in testis, *Molge*, PÉREZ (714).
 Spermatozoon, ruminants, SCHMINCKE (797).
 Spermatogenesis, Axolotl, BRANCA (134, 135).
 Reduction, spermatogenesis of *Myxine* and *Spinax*, SCHREINER & SCHREINER (806).
 Spermatozoa, *Petromyzon*, BALLOWITZ (33).
 Spermatozoa of Evertebrates, RETZIUS (760).
 Dimorphic spermat. of *Prosobranch. Moll.*, STEPHAN (857).
 Spermatozoon, *Helix*, BOLLES LEE (512).
 Spermatogenesis, *Gasteropod*, BONNEVIE (112).—Spermatogenesis, *Cephalopoda*, THESING (871).
 Achromatic figure and centrosome, spermatogenesis, *Myriapoda*, BOUIN (118).
 Spermatogenesis, reduction, chromatin, *Syromastes (Hemiptera)*, GROSS (346, 347).—*Blatta germanica*, WASSILIEFF (921).—*Gryllus*, VOINOV (909).
 Spermatogenesis, *Arachnoida*, BÜSENBERG (116).—Accessory chromosome spider, WALLACE (915).
 Spermatogenesis, *Decapod. Crust.*, LABBÉ (493).—Spermatozoa, crayfish, ANDREWS (19).
 Spermatogenesis, *Ascaris*, TRETJAKOFF (886).—*Hydra*, GUENTHER (349).—*Porifera, Calentera*, GÖRICH (337).

d. Maturation:—

- Maturation, MONTGOMERY (639).
 Maturation, *Fiona*, CASTEEL (172).
 Maturation, tetrads, *Crustacea*, LABBÉ (491).
 Chromosomes mixing of in reduction divisions, MONTGOMERY (638).
 Polar bodies, eggs of, *Ascaris*, TRETJAKOFF (885).

e. Fertilisation:—

- Fertilisation, HARTOG (382).
 Theory of fertilisation, BÜHLER (151).
 Fertilisation, methods, SCHUCKING (811).
 Fertilisation, natural and artificial, ABRIC (9).
 Fertilisation, Axolotl, hygroscopic substance and astral structure, JENKINSON (444).
 Polyspermy, effects of in *Ascaris*, BOVERI & STEVENS (130).
 Experiments as to self-fertilisation, Ascidians, MORGAN (645).

7. EMBRYOLOGY, DEVELOPMENT.

a. General:—

- History of Embryology till Harvey, BLOCH (87, 88).
 History of ideas of development, Wolff, evolution or epigenesis, WALDEYER (912).

- Embryology, Annual review, LOISEL (549).
 Record of development and anatomy, Vertebrate, SCHWALBE (820).
 Introductory text-book, embryology, frog and chick, REESE (754).
 Handbook of embryological technique, RÖTHIG (780).
 Handbook of vertebrate development, O. HERTWIG (399).
 Exposition of development-mechanics, ROUX (782).
 Chemistry of embryology, SOMMER & WETZEL (845).
 Recent Russian literature, STIEDA (862).
 Harvard, collection, value of embryological collection, MINOT (624).
 Development... = mosaic work of self-differentiating cells, WILSON (949).
 The energy of ontogenesis trout, TANGL & FARKAS (868).
 Cleavage in normal and artificial conditions, generalised explanation, SPAULDING (847).
 Normal and abnormal development comparison, frog, MORGAN (650), MORGAN & TORELLE (658).
 Aerobic and anaerobic respiration of egg, STĚPÁNEK (856).
 The term trophoblast, HUBRECHT (422, 423).
 Multiple fission and embryonic enzymes, HARTOG (382).
 Organogeny, histogenesis, and phylogeny, GINESTE (325).
 Embryonic ferments, HARTOG (383).
 Geria cells, individuality of chromosomes, Mendelian ratio, etc., MONTGOMERY (639).
 Germ cells, LEVI (524).
 Petrunkevitch on polar body in bee, and reproductive organs, WHEELER (936).
 Germinogony, MARCHAL (586).
 Polyembryonic development, osmotic pressure, and shaking, MARCHAL (587).
 Aberrant origin of mesenteron in *Platygaster*, quantitative difference in vitellus, MARCHAL (588).
 Inanition and metamorphosis, BOHN (99).
 Egg, relations to future embryo, HERTWIG (400).
 Unsegmented egg and organisation, Ascidians, CONKLIN (199).—Organ-forming germ regions, CONKLIN (201).
 Light and metamorphosis, *Amphibia*, BOHN (103, 104, 105).
 Toxins and development, CHARRIN & LE PLAY (181).
 Electrical potential, developing eggs, HYDE (431).
 Absorption of vitellus, DUBUISSON (259).
 MORGAN, development of frog, translation by SOLGER (654).
 Development of *Rana* embryo influenced by Alga, BOHN (106).
 The form of man in embryological life, RETZIUS (761).
 Development of defective embryos, chick, LILLIE (528).
 Entoderm, *Lepidoptera*, SCHWANGART (822).
 Development of excretory system, including phylogeny, recent work, FELIX (282).
 Nerve and muscle, relations in embryo, frog, HARRISON (379).
 Nervous system and development, GOLDSTEIN (335).
 Nervous system in development and regeneration, influence of, GOLDSTEIN (334).
 Dimorphic development, *Polygordius*, WOLTERECK (954).
 Parthenogenetic development, DONCASTER (253).
 Parthenogenesis, physiological review, BOHN & VIGUIER (109).
 Parthenogenetic oogenesis, see 6 b, STSCHELKANOVZEW (865).
 Artificial and natural parthenogenesis, PETRUNKEWITSCH (719).
 Exp. parthenogenesis, see c. Heterogenesis, see 1 i.

b. Particular species, stages, and organs:—

- Peripheral nervous system, SCHULTZE (815).
 Embr. interstitial cells of Leydig, WHITEHEAD (939).
 Mesonephros and Müllerian ducts, *Amphibia*, HALL (364).—Mesonephric canals, *Cavia*, MEYER (616).—Head, kidney, and Wolffian duct, mammals, JANOŠÍK (439, 440).
 Interrenal organ, POLL (733).
 Head of vertebrates, Cribrum mammals, FLEISCHMANN (292).
 Epiphysis cerebri, chick, CAMERON (168, 169).
 Nasal fossa, DIEULAFÉ (250).
 Cotyloid cavity, man and animals, DAMANY (222).
 Embr. pentadactyle extremities, vertebrates, SEWERTZOFF (830).
 Tail, vertebrates, YOUNG & ROBINSON (959).
 Embr. diaphragm, chick, BERTELLI (72).
 Bloodvessels, central nervous system, devel. and anatomy, STERZI (858).
 Suprarenal capsules, MINERVINI (621).—Suprarenal capsules, development and morphology, DIAMARE (248).
 Ovary and testis, mammals, ALLEN (12).
 Pericardium, rabbit, ROUVIÈRE (781).
 Pulmonar arteries, deer, SAKURAI (787).
 Implantation of ovum, *Spermophilus*, LEE (513).
 Allantois, VÖLKER (910).
 Vertebrate embryology, mandibular cavity, Selachians, DOHRN (252).
 Ectoblast, endoblast, termination of body, Selachians, SWAEN & BRACHET (867).
 Development of extremities, lower vertebrates, BRAUS (140).
 Devel. Bursa orientalis of vertebrates, BROMAN (145).
Phascolosoma, development, GEROULD (316).
 Spinal ventral nerves, *Selachii*, NEAL (668).
 Amnion, Selachians, D'EVANT (244).
 Embr. Hair, dermal glands, integument, *Ursus*, MAURER (598).
 Hair and glands, cat, BACKMUND (28).
 Development, Hair of *Mus musculus* var. *alba*, OYAMA (691).
 Ammonshorn, *Mus*, LEVI (522).
 Eye, lens, *Rana*, LEWIS (526).
 Body-cavity and genital structures, early stages, *Salmonides*, BÖHI (91).
 Gastrulation, lizard, PETER (717).
 Embr. Excretory system, *Amphibia*, FILATOW (289).
Desmognathus, embryology, WILDER (944).
 Segmentation, ovum *Desmognathus*, HILTON (410).
 Organ of smell, *Spinax*, SUND (866).
 Embry. *Hylodes martinicensis*, SAMPSON (788).
Phyllomedusa (a *Hylid*) development, BLES (86).
 Trigeminal ganglia *Hypogeophis*, BRAUER (138).
 Hypochorda, *Salamandra*, REINHARDT (756).
 Segmentation, *Anguis*, NICOLAS (673).
 Scutiform gland, *Amphibia*, MUTHMANN (667).
 Embr. Hairs of *Platydictylus*, KUNITZKY (490).
Polypterus development, KERR (469).
 Spinal medulla, amphibians, BARBIERI (36).
 Gills of fishes, MOROFF (659).
 Air-bladder of fishes, MOSER (660).
 Absorption of yolk, viper, DUBUISSON (260, 262), in chick, DUBUISSON (261).
 Development of branchial apparatus, *Tunicata*, JULIN (451).
 Germinal layers, *Gastropoda*, FUJITA (304).
Haminea solitaria, early stage, SMALLWOOD (842).

Maturation, fertilisation, and early cleavage, *Haminea* (Opisth. Moll.), SMALLWOOD (841).

Fiona marina, embryology, cell-lineage table, CASTEEL (172).

Pennaria, early development, HARGITT (370).

Development and anatomy, nervous system, Scorpion, McCLENDON (599).

Entoderm origin, bee, DICKEL (249).

Enteropneusta young, RITTER & DAVIS (773).

Embryonal envelope, *Sipunculidae*, GERROULD (317).

Embryology of *Geonemertes*, COE (195).

Early stages *Myzostoma*, CARAZZI (178).

Embryology of *Dinophilus*, cell-lineage, NELSON (669).

Planaria, embryology, MATTIESEN (597).—*Planaria simplissima*, embryology, STEVENS (860).

Embryology of *Gyrodactylus*, KATHARINER (455).

Embryology of *Paragordius*, MONTGOMERY (642).

Embryology of *Rhabdocæla* and *Alloiocæla*, BRESSLAU (144).

Earliest stages, *Echinoderma*, ZIEGLER (969).

Ophiothrix, early stages, MACBRIDE (577).

c. Experimental:—(See also Regeneration, 8 d).

Introduction to experimental morphology, PRZIBRAM (740).

Plasmology, RENAUDET (759).

Artificial parthenogenesis, account of recent work, ABDERHALDEN (1).

Nature of artificial parthenogenesis, ARIOLA (23, 24), GIARD (321).

Tonogamy in artificial parthenogenesis, GIARD (320A).

Abnormal development, VIGÜIER (902).

Experimental parthenogenesis, *Bufo*, BATAILLON (50).

Experimental parthenogenesis, *Rana*, *Petromyzon*, BATAILLON (51).

"Specific" agents, experimental parthenogenesis, BATAILLON (52).

Experiments on eggs of *Rana*, etc., discussed, BRACHET (131).

Artificial parthenogenesis, *Ophelia*, BULLOT (153, 154).

Difficulties of rearing parthenogenetic larvæ of *Asterias*, DELAGE (239).

Complexity of conditions for successful experimental parthenogenesis, DELAGE (240).

Bilateral symmetry, egg of *Necturus*, EYCLESYMER (275).

Experiments by injury of eggs, birds, FERRET & WEBER (286, 287).

Results of injury to the envelopes, chick, FERRET & WEBER (284, 285).

Alcohol and Echinoderm eggs, FÜHNER (303).

Influence of Röntgen rays on development, embryos, GILMAN & BAETJER (324).

Unfertilised eggs of *Echinoderm*., yolk membranes, HERBST (393).

The influence of inorganic substances on the developments of Echinoderm larvæ, HERBST (394).

Inorganic substances, effect of *Echinoderm* egg development, HERBST (395).

Centrifuge experiments, egg of *Rana*, HERTWIG (401).

Exp. as to orientation of frog-embryo, O. HERTWIG (403).

Artificial parthenogenesis, *Arbacia*, HUNTER (424).

Salt solutions, frog, JENKINSON (442, 443).

Formation of structures from indifferentiated connective tissue, KANEKS (453).

Gravity in development, KATHARINER (456).

Artificial parthenogenesis, *Mactra*, cytological processes, KOSTANECKI (484, 485).

Tension and formation of fascicular tissues, LEVY (525).

Destruction of parts, embryo chick, LILLIE (527).

Solutions, Echinoderm eggs, LOEB (546).

- Dynamical conditions and development, LOEB (544).
 Artificial parthenogenesis, Echinoderms, LOEB (545).
 Growth and regeneration, *Tubularia*, influence of agents on, LOEB (541).
 Susceptibility during cleavage, LYON (569).
 Oxygen and CO₂, *Arbacia* egg, LYON (571).
 Solution-tension, importance of, MATHEWS (595).
 Tissue change in artificial cyphosis, dog, MATSUOKA (596).
 Gravity and centrifugal force, egg of toad, MORGAN (647).
 Injury first-formed blastomeres, frog, MORGAN & TORELLE (658).
 Review of Maas' text-book, MOSZKOWSKI (661).
 Pancreas, liver and spleen, *Acipenser*, NICOLAS (672).
 Artificial parthenogenesis, critical remarks, OTTOLENGHI (690).
 Localisation of embryo on blastoderm, chick, PEEBLES (710).
 Exp. with radium, frog embryo, SCHAPER (792).
 Anisotonic solutions and saponin, eggs, SOLLMAN (844).
 Effects of ether and salts, Echinoderm eggs, SPAULDING (848).
 Double monsters, cyclopic, SPEMANN (849).
 Injuries blastopore region, frog, TODD (878).
 Influence of radium on development, TUR (890).
 Centrifuge experiments, egg of *Rana*, WETZEL (935).
 Experiments as to germinal anatomy, egg of *Dentalium*, WILSON (947).
 Development of egg-fragments, *Cerebratulus*, YATSU (957).
 Exp. localization in egg of *Cerebratulus*, ZELENY (966).

8. REPRODUCTION, SEX, HEREDITY, REGENERATION.

a. General:—

- For cell-processes in connection with Reproduction see VI.
 Reproduction of organisms, aetiology, illustrations in *Protozoa*, HARTMANN (381).
 Conjugation and natural death, NERESHEIMER (670).
 Reproduction of Flagellata, FOÀ & GRASSI (293).
 Sexual reproduction, *Stylohyinchus*, LÉGER (514).
 Regeneration and non-sexual reproduction, *Sagartia*, TORREY & MERY (882, 883).
 Cross-breeding, specially cytological, aspects, HÄCKER (358).
 "Natural merogony," *Gyrodactylus*, KATHARINER (455).
 Breeding albino trout, PETTIS (721).
 Inadequate spermatozoa, deficient structures ensuing, SIMROTH (837).
 Alternation of generations and change of host, *Protozoa*, SCHAUDINN (793).
 Chromatin of hybrids, MOENKHAUS (628).
 Heterogeneous hybridisation, LOEB (540).
 Artificial hybridisation, LOEB (539).
 Hybrids, Echinoderm, BOVERI (127).
 Hybridisation of Echinoderms, LOEB (538).
 Natural and artificial parthenogenesis, PETRUNKEWITSCH (719).
 Parthenogenesis, *Apis*, BUTTEL-REEPEN (160).

b. Sex:—

- Phenomena of sex, *Aphidæ*, BALBIANI (31).
 Sexual dimorphism, DEWAR (247), LISTON (534), YOUNG (960).
 Breeding mice for sex data, COPEMAN & PARSON (206).
 The sexes of two eggs of a female pigeon, LOISEL (555).
 Superiority morphologically of female, MONTGOMERY (640).

Sexual-cycle in *Amæba*, CALKINS (164).

Hermaphroditism, SCHREINER (807).

Secondary sex characters independent of primary, KELLOGG (462).

Secondary sexual characters, GIARD (320).

Secondary sexual characters, LOISEL (554).—Secondary sexual characters and testis, SHATTOCK & SELIGMANN (834).

Origin of secondary sexual characters, BOUIN & ANCEL (123).—Influence of testis and interstitial gland thereof on organism, ANCEL & BOUIN (14-17), BOUIN & ANCEL (119).—Testes and sexual characters, frog, LOISEL (553).—Interstitial gland, see also 6 c.

Sex, and the determination of sex, ABRIC (8).

Determination of sex, BAYER (57), BEARD (62), BILLON (81), MARCHAL (587), MEISENHEIMER (601), SCHRÖDER (808), THOMSON (873).

Determination of sex in *Hymenoptera*, CASTLE (173), WHEELER (936).

Determination of sex, nuclear division or germinogony, MARCHAL (586).

Determination of sex by parthenogenesis, *Apis*, BUTTEL-REEPEN & BRESSLAU (159).

Determination of sex, and food, *Insecta*, KELLOGG & BELL (464).

c. Heredity:—(See also 6 e fertilisation):

Heredity, BATESON (53), PETRUNKEWITSCH (720), RITTER (772).

Nature of heredity, ABRIC (5), BEARD (59, 60), REID (755).

Physical forces and heredity, PERRIER (716).

Theories of inheritance tested, PEARSON (705).

Heredity and evolution, BATESON (54).

Heredity, abstracts of recent works, FISCHER (291).

Record of breeding and other experiments, MÜLLER (663).

Importance of tables of ancestry, GROBER (344).

Heredity of albinism, Mendel's laws, CASTLE & ALLEN (174).

Inheritance of coat-colour, greyhound, BARRINGTON, LEE & PEARSON (45).

Rabbits, coat and albinism, HURST (427).

Heredity of colour, mice, CUÉNOT (219), DAVENPORT (229), ALLEN (13).

Crossing albino and waltzing mice, DARBISHIRE (224, 225).

Heredity, hair, etc., horse, DAVENPORT (228).

Heredity of polydactyly, BALLOWITZ (32).

Heredity web-footed pigeon, STAPLES-BROWN (854).

Heredity of colour, pigeons, LOISEL (555).

Psychological heredity, man, RAWITZ (748).—Heredity of mental characters, man, REDFIELD (751).—Inheritance of mental and moral characters, man, PEARSON (708).

Pearson and mental heredity, LENDENFELD (517).

Heredity in var. of a moth, RAYNOR & DONCASTER (750).

Inheritance of song, birds, SCOTT (825, 826).

Heredity of variation, *Helix*, LANG (498).

Heredity of acquired characters, criticism of Lamarckian views, POULTON (736).

Heredity of acquired morbid conditions, DELAMARE (242).

Heredity, pathological, RÜDIN (784).

Heredity pathological, SCHÜLE (812).

Heredity of insanity, KÖNIG (479, 480).

Heredity of immunity from poisons, LUSTIG (562).

Collateral heredity in pathology, DAMAYE (223).

Crossing pigeons, WHITMAN (941).

The vigour of hybrids and mutations, COOK (202).

Heredity and crossing, HÄCKER (360).

Heredity and cytology, Mendel's laws, HÄCKER (358).

Cytology and heredity, MONTGOMERY (641).

Alternative inheritance, Mendel's laws, PEARSON (704).—Alternative inheritance v. Mendel's law, PEARSON (707).

Ancestral heredity and Mendelianism, LUTZ (564).

Heredity of diathesis, or Mendelian heredity, LE DANTEC (509).

Mendel's laws, account of, and list of works relating to, HURST (426).

Mendelian laws, COUTAGNE (213).

Mendelian heredity, CUÉNOT (218).

Mendel's law, PEARSON & LOCK (706).

Mendel's views and origin of species, DARBISHIRE (226).

Mendel's laws, wheat and barley hybrids, BIFFEN (78).

Mendel's laws, spermatogenesis, hybrid pigeons, GUYER (354).

Mendel's law and albinism in man, WELDON (930).

Chromosomes (individuality, etc.) see 5 c.

d. Regeneration (incl. Grafting):—

Regeneration, transplantation, abstracts of recent works, FISCHER (290).

Nature of regeneration, SCHULTZ (814).

Germ-layers and regeneration, MORGAN (649).

Regeneration and involution, recent work, BARFURTH (42).

Regeneration and ontogeny, ZELENY (967).

Regeneration and grafting, Hydroids, BILLARD (80).

The regulation of form, HOLMES (414).

Regeneration exemplified on a Lower Carboniferous Crinoid, WHITFIELD (940).

Radium and regeneration, frog, SCHAPER (792).

Röntgen rays and regeneration, Planarians, BARDEEN & BAETJER (39).

Organic polarity, analysis, MORGAN (651).

Polarity, *Tubularia*, MORGAN & STEVENS (657).

Polarity in regeneration of earthworm, MORGAN & DIMON (655).

Influence of nervous system, regeneration in *Alpheus*, BRUES (149).

Aetiology of form of regenerated parts due to function, CHILD (186).

Double structures, regeneration of *Lumbricidae*, KORSCHOLT (483).

Regeneration, various forms, MORGAN (644).

Regeneration, *Planaria*, polarity, axial heteromorphosis, MORGAN (652).

Morphological polarity, LOEB (543).

Regenerative powers of different tissues, WINTREBERT (951).

Regeneration of liver and kidney, RIBBERT (765).

Regeneration of nerves, MOTT, HALLIBURTON & EDMUNDS (662); LANGLEY & ANDERSON (500, 501).

Regeneration, embryo of chick, LILLIE (528).

Skeleton of regenerated limb, frog, BYRNES (162).

Regeneration, tadpoles, BYRNES (161).

Pigmented skin, frog, chromatophores, LOEB & STRONG (548).

Regeneration of bones, *Triton*, WENDELSTADT (933).

Regeneration, Cray-fish, REED (753).

Heteromorphic regen. *Palinurus*, ARIOLA (26).

Regeneration, *Lepidoptera* pupa, HIRSCHLER (411).

Regeneration, tarsi, *Periplaneta*, KELLOGG & BELL (465).

Regeneration, larval legs, silkworm, KELLOGG (461).

Non-regeneration sexual glands, *Lepidopterous* larvæ, KELLOGG (462).

Natural regeneration in Annelids, ORLANDI (682).

Regeneration and nervous system, *Leptoplana*, CHILD (187, 188).

Regeneration of segments, *Polychæta*, IWANOFF (432).

Regeneration, Planarian, MORGAN & SCHIEDT (656).

Heteromorphosis, *Planaria*, MORGAN (648).

Regeneration heteromorphic tails, *Planaria*, MORGAN (646).—Regeneration heteromorphic tail, *Allobophora*, DIMON (251).

Regeneration in *Enchytræidæ*, NUSBAUM (676).

Natural regeneration, starfish, from single arm, KELLOGG (460).

Form-regulation *Cœlentera* and *Turbellaria*, CHILD (189).

Regeneration, *Tubularia*, GODLEWSKI (328); KING (472).—Regeneration, influence of medium, Tubularians, LOEB (542).—Regeneration, or closure, split stems *Tubularia*, BORING (114).

Regeneration *Cerianthus*, initiation, CHILD (185).

Regeneration and symmetry, *Actinaria*, CARLGREN (170).

Regeneration, *Rhizostoma*, HARGITT (371).

Regeneration, *Scyphomeduse*, HARGITT (372).

Regeneration, *Sagartia*, TORREY & MERY (883).

Regeneration, *Stylaria*, HARPER (376).

II. MAMMALIA.

BY

R. LYDEKKER.

CONTENTS.

	Page		Page
Introduction	2	Muridæ	39
I. TITLES	2	Jaculidæ and Spalacidæ	41
II. BIOLOGY (SUBJECT-INDEX).		Geomyidæ and Heteromyidæ	41
Anatomy (A—H)	27	Octodontidæ	41
Development (I)	29	Hystrioidæ and Erethizontidæ	41
Variation; various notes (K)	30	Dinomyidæ and Caviidæ	41
Geographical distribution	31	Eomyidæ	41
†Fossil faunas	32	Leporidæ and Ochotonidæ	42
III. SYSTEMATIC.		UNGULATA	42
PRIMATES	33	ARTIODACTYLA	42
Anthropoidea	33	Bovidæ and Antilocapridæ	42
Lemuroidea	34	Giraffidæ and Cervidæ	42
CHIROPTERA	34	Tragulidæ and Camelidæ	44
INSECTIVORA	35	Suidæ, Dicotylidæ, Hipopopotamidæ etc.	44
CARNIVORA	36	PERISSODACTYLA	45
Carnassidentia	36	HYRACOIDEA, BARYPODA and AMBLYPODA	46
Felidæ and Viverridæ	36	PROBOSCIDEA	46
Proteleidæ and Canidæ	37	CETACEA and SIRENIA	46
Ursidæ and Procyonidæ	37	EDENTATA and EFFODIENTIA	47
Mustelidæ	38	MARSUPIALIA	48
Pinnipedia	38	MONOTREMATA	49
Creodontia	38	INCERTÆ SEDIS	49
RODENTIA	38	ADDENDUM	49
Anomaluridæ and Sciuridæ	38		
Haplodontidæ and Castoridæ	39		
Ischyromyidæ and Gliroidæ	39		

INTRODUCTION.

THE most important discovery of the year, so far as systematic work is concerned, is undoubtedly the relationship between Zeuglodonts and the Creodont Carnivora, as described by FRAAS on the evidence of Egyptian material. Next, perhaps, in importance is the reference by ANDREWS of *Arsinoëtherium* to a distinct group of Ungulates—the Barypoda. The rediscovery by GOELDI of the S. American Rodent *Dinomys* is also an event of first-rate importance; as is also the description by THOMAS of a new genus (*Hylochoerus*) of African Swine. BROOM's researches into the relationships between the jaws and limbs of Theriodont Reptiles and of Mammals are likewise of the highest importance; while it may be permissible also to allude to the Recorder's observations on the phylogeny of Arab and Thoroughbred Horses, based on the existence of vestiges of the lachrymal cavity in their skulls.

Important contributions to the morphology of the Monotremata have been made in the continuation of the memoirs on Semon's Reise; while ABEL's investigations on the skeleton of extinct Sirenians are likewise of great value. The continuation of SCOTT's work on Tertiary Patagonian Mammals also demands mention. Two investigators, CARLSSON and SWEET, have been independently working at the anatomy of *Notoryctes*.

MAX WEBER's "Säugethiere" is a most important text-book on the class; while, from another point of view, the work on British Mammals by MILLAIS, of which the first volume has appeared during the year, likewise demands special recognition. Another valuable faunistic work is ELLIOT's Mammals of Central America. It is satisfactory to welcome the appearance of the first instalments of a supplement to TROUESSART's "Catalogue"; while PALMER's "Index Generum Mammalian" is an absolutely invaluable work.

Ordinary descriptive work has progressed with the rapidity characteristic of recent years.

The Record is considerably larger than its immediate predecessors, despite the omission of a number of articles which did not appear to the Recorder to be of any scientific importance.

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2. ——. Ueber einen Fund von *Sivatherium giganteum* bei Adrianopel. Anz. Ak. Wiss. 1904, pp. 195 & 196, and SB. Ak. Wien cxiii, pp. 1-23, pl. [*Giraffidae*.]
3. ABY, F. S. Observations on the blood-capillaries in the cerebellar cortex of young Cats. J. Neurology ix, pp. 26-34, pl. ii (1899). [*Felidae*.]
4. AFLALO, F. G. and others. The Sportsman's Book for India. London, pp. 567, illustrated. [Contains chapters on Big Game.]
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8. ALEZAIS, —. Les adducteurs du Maki. C.R. Soc. Biol. lvi, pp. 537-539. [*Lemuroidea*.]
9. ALLEN, B. M. The embryonic development of the ovary and testis of the Mammals. Amer. J. Anat. iii, pp. 89-146, 7 pls.
10. ALLEN, G. M. Fauna of New England—*Mammalia*. Pap. Boston Soc. vii, 34 pp.
- 10A. —. The heredity of coat-colour in Mice. P. Amer. Ac. xl, pp. 61-163. [*Muridæ*.]
11. —. Observations on Rorquals off Newfoundland. Amer. Natural. xxxviii, pp. 613-623, figg. [*Cetacea*.]
12. ALLEN, J. A. New forms of the Mountain Goat (*Oreamnos*). Bull. Amer. Mus. xx, pp. 19-21. [*Bovidæ*.]
13. —. Mammals from S. Mexico and Central and S. America. T. c. pp. 29-80, figg. [*Chiroptera*, *Carnivora*, *Rodentia*.]
14. —. The external ear-bone in Rodents. T. c. pp. 135-138, fig. [*Rodentia*.]
15. —. Further notes on Mammals from N. W. Durango. T. c. pp. 205-210. [*Sciuridæ*.]
16. —. New Bats from Tropical America, with note on the species of *Otopterus*. T. c. pp. 227-237. [*Chiroptera*.]
17. —. Mammals collected in Alaska by the A. J. Stone expedition. T. c. pp. 273-292.
- 17A. —. A new Sheep from Kamchatka. T. c. pp. 293-298, figg. [*Bovidæ*.]
18. —. New Mammals from Venezuela and Colombia. T. c. pp. 327-335. [*Carnivora*, *Rodentia*, *Marsupialia*.]
19. —. Mammals from Venezuela. T. c. pp. 337-345.
20. —. A fossil Porcupine from Arizona. T. c. pp. 383 & 384. [*Erethizontidæ*.]
21. —. The Tamandua Anteaters. T. c. pp. 385-398, figg. [*Edentata*.]
22. —. Mammals from the district of Santa Marta, Colombia, with field-notes by Mr H. H. Smith. T. c. pp. 407-468. [*Primates*, *Mustelidæ*, *Erethizontidæ*.]
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25. —. Paleontologia Argentina, No. 2. La Plata, 79 pp., figg.
- 25A. —. Nuevas especies de Mamíferos. Cretáceos y Terciarios de la República Argentina. Buenos Aires, 142 pp.; ex An. Soc. Argent. lvi, lvii, & lviii. [See Addenda.]
26. ANCEL, P. & BOUIN, P. Tractus génital et testicule chez le Porc cryptorchide. C.R. Soc. Biol. lvi, pp. 281 & 282. [*Suidæ*.]
— [See also BOUIN & ANCEL (71).]
27. ANDERSEN, K. Five new *Rhinolophi* from Africa. Ann. Nat. Hist. (7) xiv, pp. 378-388. [*Chiroptera*.]
28. —. On von Heuglin's, Rüppell's and Sundevall's types of African *Rhinolophi*. T. c. pp. 451-458. [*Chiroptera*.]
29. — & MATSCHIE, P. Uebersicht einiger geographischen Formen der Untergattung *Euryalus*. SB. Ges. naturf. Berlin 1904, pp. 71-83. [*Chiroptera*.]
30. ANDERSON, R. J. Some considerations respecting the parietal bone. Int. J. Anat. xxi, pp. 318-343, figg.
31. —. The premaxilla in *Primates*. C.R. xivth Congr. Internat. Med. 1903, 7 pp., figg. [*Primates*.]
32. —. Note on the skull of *Grampus griseus* found on the coast near Galway. Rep. Brit. Ass. 1903, pp. 691 & 692. [*Cetacea*.]
33. —. Note on the peritoneum in *Meles taxus*. T. c. p. 692. [*Mustelidæ*.]
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35. ANDREAE, A. Zur Kenntniss des Miocäns von Oppeln in Schlesien. Mitt. Mus. Hildesheim, No. 20; Säugethiere, pp. 18-22. [*Insectivora*.]
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37. —. Note on the *Barypoda*, a new order of Mammals. T. c. pp. 481 & 482. [*Ungulata*.]
38. ANGLAIS, J. Les animaux domestiques—Cheval, Vache, Mouton, Porc, Chien, Coq et Oie. Paris, pp. 193.
39. ANON. Gorillas at the Zoological Gardens. Field civ, p. 459. [*Primates*.]
40. ANTHONY, —. Rôle morphogénique du muscle crotaphyte sur le crâne et le cerveau chez le Chien. Bull. Mus. Paris 1903, pp. 364 & 365. [*Canidæ*.]
41. ARCHIBALD, S. [Mrs]. On the damage done to fir-trees by Squirrels. Tr. Edinb. Field Soc. v, pp. 95 & 96. [*Sciuridæ*.]
42. ARMIN, S. A. O tavi denevér (*Myotis dasycneme*) Magyarországon. Allatt. Kozl. Magyar Tars. 1904, pp. 98-102, 4 pls.
43. AUERBACH, M. Ueber den Winterschlaf unserer heimischen Säugethiere. Verh. Ver. Karlsruhe xvi, pp. 16* & 17*.
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BARRETT-HAMILTON, G. E. H. [See HAMILTON, G. E. H. BARRETT (194-197).]
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53. BECCARI, O. Wanderings in the Great Forests of Borneo; Travels and Researches of a Naturalist in Sarawak. Translated by F. H. H. GUILLEMARD. London, pp. xxiv + 424, illustrated.
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57. BIELER, S. Sur un crâne d'Ours. Arch. Sci. Nat. (4) xvii, p. 445. [*Ursidae*.]
58. BLANCKENHORN, M. Oberpliocän mit *Mastodon arvernensis* auf Blatt Ostheim von der Rhon. Jahrb. geol. Landesanst. Berlin xxii, pp. 364-371, pl. viii. [*Proboscidea*.]
59. BLENDINGER, W. Das Cribrum der Säugethiere. Morphol. Jahrb. xxxii, pp. 452-478, pls. xi & xii. [See also FLEISCHMANN, A.]
60. BOCAGE, J. V. B. DU. Contribution à la faune des quatre îles du Golfe de Guinée. iv. Ile de St Thomé. J. Sci. Lisb. (2) vii, pp. 65-96.
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64. BONHOTE, J. L. On a new species of *Helictis*. Ann. Nat. Hist. (7) xiii, pp. 592-594, 1903. [*Mustelidae*.]

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- [For additional titles see Addenda, p. 51.]

II. GENERAL BIOLOGY (INCL. ANATOMY).

[+ prefixed to a paragraph indicates that it relates, in part or altogether, to extinct forms: when the sign is placed before a specific name it indicates that the species referred to is extinct.]

GENERAL AND COMPARATIVE ANATOMY.

A. GENERAL.

WEBER (487).

Orycteropus and *Manis*; CARRUCIO (96).

Notoryctes; CARLSSON (95), SWEET (445).

Histology of *Cetacea*; RAWITZ (373).

B. TEGUMENTARY SYSTEM.

Hair-arrangement; KIDD (233-335).

Integument and hair-development in *Ursus*; MAURER (311), BACKMUND (Addenda).

Skin; RÖMER (385A).

Surface of the palm (papillary ridges, etc.); WHIPPLE (493).

C. NERVOUS SYSTEM; SENSE ORGANS.

Brain; BEDDARD (55): *Primates*; BEDDARD (54), SMITH (430), ZUCKERKANDL (503): Ox; FAVARO (156): Sheep; WILDER (496), FAVARO (157): *dura mater*; DENNSTEDT (Addenda).

Cerebellum; BRADLEY (74): Cerebellar capillaries; ABY (3).

Superior Commissure; CAMERON (93).

Medulla oblongata, respiratory centre; LOEB (254).

Hypophysis cerebri; ROSSI (394).

Sulcus of Rolando; SERGI (418).

Nerve terminations in *Talpa*; ROMERO (393).

Cochlear nerve of *Spermophilus*; WEIGNER (489 & 491).

Spinal chord: histology of; DEXLER (136): of *Phocaena*; HEPBURN & WATERSTON (204).

Neurones of *Mus*; HATAI (200).

Hypoglossal nerve of *Bos*; WEIGNER (490).

Olfactory; BEDFORD (56), BLENDINGER (59), FLEISCHMANN (160).

Ear: in *Phocaena*; BOENINGHAUS (61): *Rodentia*; ALLEN (14): *Monotremata*; ALEXANDER (7).

Eustachian tube of *Myrmecophaga*; DENKER (131).

Hearing in Whales; MEISENHEIMER (312).

Eye; BRUTON (86), MOTT (335), SCHNAUDIGEL (405), TRENDLENBURG (470).

Nose; GLAS (Addenda).

Eyelid; EGGELING (146).

Chorda tympani and visceral arches; EMMEL (151).

Nerve irritability, CUTTER & GILMAN (122).

Non-medullated nerve; ALCOCK (Addenda).

Ganglia; HATAI (201), VALEDINSKY (Addenda).

D. MYOLOGY.

Supernumerary pectorals; HUNTINGDON (214): pectoralis major, etc., variation in; BÖSE (62): gluteo-femoral of *Hapale*; JAMIESON (218): popliteal; FÜRST (168): crotophite of *Canis*; ANTHONY (40): adductors of *Lemur*; ALEZAIS (8): biceps brachii of *Hylobates*; GRÖNROOS (187): muscles of hyoid apparatus, etc.; CHAINE (98-107): of *Chlamydomorphus*; CHAINE & KUNSTLER (108): of heart; BRAEUNIG (76), RETZER (381).

E. OSTEOLOGY.

Cranial abnormalities; FRASSETTO (164), HRDLÍČKA (212 & 212A).

Astragalar perforation; AMEGHINO (24).

Development of mandibular articulation; KJELLBERG (237): mandibular articulation and carpus and tarsus of Theriodonts and Mammals; BROOM (81 & 82).

Craniology of *Primates*; MACNAMARA (292); WALKOFF (485): premaxilla of *Primates*; ANDERSON (31).

Brain-impression in skull; SCHWALBE (411).

Specific characters in skull; BARTHOLD (50).

Prefrontal; MAGGI (295): Parietal; ANDERSON (30).

Manubrium sterni; EGGELING (146).

Ulna and fibula not homologous; DAMANY (123).

Cotyloid cavity; DAMANY (Addenda).

Macacus, divided frontal; KANTOR (226).

Megaladapis; LORENZ (258).

Entepicondylar foramen in human humerus; DWIGHT (143).

Zeuglodonts and Creodonts; FRAAS (163).

External ear of Rodents; ALLEN (14).

Limbs of *Dipus*; SCHUMANN (408).

Equus, trapezium ; BRADLEY (75).
Giraffa, skull ; RIDWOOD (382).
Merycodus ; MATTHEW (308).
Ursus ; ANDERSON (34), BIELER (57) ; HOLST (212).
Sirenia ; ABEL (1).
 Pelvis of *Sirenia* ; LORENZ (257).
 Limbs of *Halicore* ; FREUND (166).
Megatherium ; BOSCA (69).
Glyptodon ; JANENSCH (219).
Grampus, skull ; ANDERSON (32).
 Caudal vertebræ of *Lepus* ; MATSUOKA (306).

F. ALIMENTARY SYSTEM.

a. *Dentition*.

Tooth-change in adult ; LECHE (249).
 Abnormalities ; MAJOR (296), CATOULLARD (97), LANDOIS (243).
Sirenia ; ABEL (1).
 Trituberculism ; OSBORN (349).
 S. American Tertiary Mammals ; GAUDRY (170).
 Phylogeny of Ungulate Molars ; AMEGHINO (23).
 General ; CUNNINGHAM (120), STACK (435).

b. *General*.

Perineal sac of *Cavia* ; GROSZ (188).
 Stomach ; BARNABO (47) : Lymphatics ; DRZEWINA (141), SABIN (Addenda).
 Pancreas of *Canis* ; BARTELS (49).
 Liver, development of veins ; BONNE (67).
 Pancreatic bladder in *Felis* ; MILLER (329).
 Salivary glands ; ILLING (Addenda).
 Cæcum ; MAGNUS (Addenda).

G. CIRCULATORY AND RESPIRATORY SYSTEMS.

Heart ; BRAEUNIG (76), DEVEZ (133 & 134), RETZER (381), MACWILLIAM (293) : Pericardium, development ; ROUVIÈRE (396).
 Veins of liver ; BONNE (67).
 Capillaries of cerebellum ; ABY (3).
 Hæmo-lymph glands ; LEWIS (253).
 Arteries ; MÜLLER (Addenda).
 Lung ; BREMER (77A).

H. URINO-GENITAL ORGANS.

Copulatory organs ; GERHARDT (171) : *Phocæna* ; HEPBURN & WATERSTON (205) : *Sus* ; ANCEL & BOUIN (26) : *Equus* ; BOUIN & ANCEL (71) : *Monotremata* and *Marsupialia* ; DISSELHORST (137), KELBEL (232) : Genital cords of *Phalanger* ; BROCK (79) : Kidneys ; KRASUSKA (242) : Poison of genital glands ; LOISEL (255) : Testicle of *Equus* ; BOUIN & ANCEL (71) : of Lemuroids ; BRANCA (77) : Organ of Rosenmüller in *Cavia* ; SACCHETTI (397) : Prostate ; MÜLLER (Addenda).

I. DEVELOPMENT, incl. EMBRYOLOGY.

Ovum and placenta ; JENKINSON (221), ROBINSON (383).
 Ovum ; STRICHT (443) : Ovum and testis ; ALLEN (9).
 Ovary and regeneration ; PALADINO (355 & 356).
 Implantation of ovum ; REJSEK (379).
 Corpus luteum ; JANKOWSKI (220), VÖLKER (480).

Oestrous cycle ; MARSHALL (301).
 Foetal appendages ; SCHWALBE (410).
 Placenta of *Primates* ; WALKOFF (485).
 Breeding-season of *Phocæna* ; NEHRING (339).
 Gestation of *Meles* ; COCKS (112).
 Of urino-genital organs of *Echidna* ; KELBEL (232).
 Of olfactory nerve ; BEDFORD (56).
 Of hepatic veins ; BONNE (67).
 Of pericardium ; ROUVIÈRE (396).
 Of teeth ; LECHE (249), COTOUILLARD (97), MAJOR (296).
 Of tympanum ; KAMPEN (225).
 Of mandibular articulation ; KJELLBERG (237).
 Of marsupium ; BRESSLAU (78).
 Of diaphragm ; VÖLKER (479).

K. VARIATION, AND VARIOUS NOTES.

Habits and environment of Okapi ; DAVID (127).
 Habits of Rats ; HEWETT (209).
 Habits of Bats and Hedgehogs in winter ; MOFFATT (330).
 Habits of *Geomys* ; SETON (419).
 Habits of British Carnivora, etc. ; TREGARTHEN (462).
 Habits and extinction of various species ; RENSHAW (380).
 Habits of Whales ; RACOWITZA (370).
 Habits of Roe ; "SNAFFLE" (432).
 Coloration ; BONHOTE (65).
 Coloration of Lynxes ; LYDEKKER (277).
 Coloration of Cattle ; DAVIES (128), LYDEKKER (275).
 Colour-heredity in Greyhound ; BARRINGTON, LEE & PEARSON (48).
 Colour-heredity in Mice ; ALLEN (10), DARBYSHIRE (123) ; DAVENPORT (125), CUÉNOT (119A).
 Colour-heredity in eyes of Mice ; CUÉNOT (119).
 Winter whitening of hair ; HAMILTON (197).
 Abnormally coloured lion-cubs ; BOLTON (63).
 Heredity in colour ; ALLEN (10A), BARRINGTON, LEE & PEARSON (48), DARBYSHIRE (124), DAVENPORT (126), CUÉNOT (119).
 Heredity in intelligence ; DAVENPORT (126).
 Cursorial adaptation ; LULL (262).
 Artificial hibernation ; BRUMPT & WURZ (83).
 Hibernation ; AUERBACH (43).
 Sex of Mice ; COPEMAN & PARSONS (114).
 Food of Lion ; CRAWSHAY (117) : of Shrew ; RÖRIG (386) : of Squirrel ; WEMER (492).
 Hoof-structure in *Equidæ* ; LYDEKKER (281).
 Hybrids ; DARBYSHIRE (124), KNOTTNERUS-MEYER (240), POCKOCK (364).
 Rudimentary horns in Horse ; CUNNINGHAM (120).
 Abnormalities in muscles ; BÖSE (62), CHAINE (99).
 Abnormalities in skull ; FRASSETTO (164), HRDLÍČKA (211 & 212), HANSEMANN (199).
 Abnormalities in teeth ; COTOUILLARD (98), LANDOIS (246), MAJOR (296).
 Abnormalities in antlers ; BOTEZAT (70), LANDOIS (247).
 Abnormalities in viscera ; BARNABÒ (47).
 Abnormalities in human humerus ; DWIGHT (143).
 Abnormalities in frontal of *Macacus* ; KANTOR (226).
 Inconstancy of trapezium in *Equus* ; BRADLEY (75).
 Presence of pancreatic bladder ; MILLER (329).
 Arboreal ancestry of Mammals ; MATTHEW (307).

- Ancestry of Mammals ; FÜRBRINGER (167).
 Relation of Theriodonts to Mammals ; BROOM (81 & 82).
 Phylogeny of *Primates* ; CHAPMAN (109), MACNAMARA (Addenda).
 Phylogeny of *Carnivora* ; LYDEKKER (265).
 Phylogeny of *Camelidae* ; LYDEKKER (264).
 Phylogeny of *Equidae* ; LYDEKKER (263).
 Phylogeny of *Proboscidea* ; WOODWARD (500).
 Phylogeny of *Sirenia* ; ABEL (1).
 Ancestry of Horse ; LYDEKKER (266 & 267), OSBORN (350).
 Ancestry of Arabs and Thoroughbreds ; LYDEKKER (284).
 Adaptation to aquatic life in *Cetacea* ; RÖMER (385).
 Speed ; SETON (420).
 Effects of barometric pressure ; AGGOZOTTI (5), MOSSO (332-333A),
 MOSSO & MARRO (334).
 Antler exhibition ; MATSCHIE (305).
 Seals swallowing stones ; LUCAS (260).
 Damage by Squirrels ; ARCHIBALD (41).
 Prehistoric portraits of Mammals ; NADAILLAC (337).
 Ancient representations and mummies ; LYDEKKER (272), BOUSSAC (72),
 SCHLOSSER (Addenda).
 Okapi in Egyptian frescoes ; GAILLARD (169), WIEDEMANN (495).
 Fur-trade ; LYDEKKER (273).
 Sealing and Whaling ; SOUTHWELL (434), TRUE (472).
 Mental powers of Apes ; OLIVIER (345), VASCHIDE (477).
 Poison of *Ornithorhynchus* ; NOC (343).
 Poison of genital gland ; LOISEL (255).
 Immunity to poison ; WILSON (Addenda).
 Record ; LEDERMANN (251).
 Text-book ; WEBER (487).
 Catalogues ; ELIOTT (150) ; PALMER (357), PREBLE (369), TROUESSART
 (471).
 Domesticated Mammals ; ANGLAIS (38) ; BYLANDT (88), CABRERA (89),
 LYDEKKER (276, etc.), OSBORN (350).
 Types ; MONTGOMERY (331).

GEOGRAPHICAL DISTRIBUTION.

General ; PACKARD (354).

1. EASTERN HOLARCTIC.

- British Isles ; GORDON (179), MILLAIS (325), FORREST, Salop (162), BON-
 HOTE, Cambridgeshire (66), TAYLOR, Cetacea (446).
 Spain (Bats) ; CABRERA (91).
 Germany ; IDZERODT (217), ULMER (475).
 Silesia ; ANDREAE (35).
 Bohemia ; KAFKA (224).
 Italy ; LUCIFERO (261), GHIDINI (172).
 Central Asia ; GYÖRGY (192).
 Poland ; DYBOWSKI (144).
 Balkans ; KNIES (238).
 Siberia ; KASTSCHENKO (228).

2. AFRICA and MADAGASCAR.

- General ; LYDEKKER (271).
 East Central ; POWELL-COTTON (116), SCHILLINGS (402).
 Gulf of Guinea ; BOCAGE (60).
 Angola, Somaliland, and Egypt ; THOMAS (454, 456 & 457).
 Namaqualand and Uganda ; THOMAS & SCHWANN (467 & 467A).

3. S.E. ASIA and ASIATIC ARCHIPELAGO.

India; AFLALO (4), BURKE (86).

Sumatra; SCHNEIDER (406).

Borneo; BECCARI (53).

4. NORTH AMERICA.

Big Game; GRINNELL (186), HUNTINGDON (214), WHITNEY (494).

Origin of fauna; GRANT (182).

Alaska; OSGOOD (353), ALLEN (17), ELLIOT (148), RADCLYFFE, big game (371).

Canada; HANBURY, big game (198).

Newfoundland; ALLEN, porquails (11).

New England; ALLEN (10).

Greenland; JENSEN (222).

California; STONE (441 & 442).

Mexico; GOLDMAN (178).

Whales of Atlantic coast; TRUE (472).

5. CENTRAL AND SOUTH AMERICA.

ALLEN (14-16), ELLIOT (150), THOMAS (445, etc.).

Chili, CABRERA (92).

São Paulo; PIRA (362).

Para; GOELDI & HAGMANN (177).

Guatemala; RODRIGUEZ (384).

Bermudas; VERRILL (478).

Falkland Islands; VALLENTIN (476).

6. AUSTRALASIA.

Australia; THOMAS (447 & 449).

New Guinea; THOMAS (461).

New Zealand; HUTTON (216 & 217).

†*Fossil Faunas.*

Pleistocene; FRECH & GEINITZ (165).

British Islands; (Cambridgeshire), LYDEKKER (274), HINTON & KENNARD (210).

Denmark; WINGE (498).

Sweden; MUNTHE (336A).

Italy; ALESSANDRI (6), MARIANI (300).

Savoy; DEPÉRET & DOUXAMI (132).

Alsace; DOEDERLEIN (138), DOEDERLEIN & SCHUMACHER (139).

Switzerland; STEHLIN (437), STUDER (444), NUESCH (344).

France; COUFFON (117).

Germany; NEHRING (338), STERZEL (439), ULMER (475).

Bavaria and Württemberg; ROGER (387), SCHLOSSER (404A).

Bohemia; KAFKA (224), WOLDRICH (499).

Thuringia; ZIMMERMANN (502).

Moravia; KNIES (239).

Rumania; SIMONIESCU (425).

Moldavia; SIMONIESCU (426).

Samos; SCHLOSSER (404).

- Egypt; ANDREWS (36).
 Madagascar; STANDING (436).
 India; PILGRIM (361).
 N. America; MATTHEW & GIDLEY (310), OSBORN (348), SINCLAIR (427),
 WORTMAN (501): Maryland (*Cetacea*); CASE (97).
 S. America; AMEGHINO (23-25A), GAUDRY (170), SCOTT (416).

III. SYSTEMATIC.

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 Genera of Mammals; PALMER (357).

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III. INSECTIVORA.

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Echidna, auditory organ, ALEXANDER, Denk. Ges. Jena—Semon's Reise iii, *Monotremata*, ii, p. 1; development of urino-genital apparatus, KELBEL, t. c. p. 151.
Ornithorhynchus, poison of spur, Noc, C.R. Soc. Biol. lvi, p. 451.
 †*Hypsiprymnopsis* Dawkins, 1864, stands for *Microlestes* Plieninger, 1847, nec Goebel 1846, Poche, Zool. Ann. i, p. 47.

†INCERTÆ SEDIS.

- †*Karoomys*, n. g. for *K. browni*, Trias, Aliwal North, BROOM, Geol. Mag. (4) x, p. 345, 1903, n. sp.

ADDENDA.

The following new names for extinct Argentine Mammals are stated to have been proposed by AMEGHINO in An. Soc. Argent., vols. lvi–lviii. These vols., so far as known, have not reached this country, and the names are quoted from a tract published at Buenos Aires entitled “Nuevas Especies de Mamíferos, Cretáceos y Terciarios de la República Argentina (No. 25A):—

- (?) PRIMATES.—*Acropithecus* (n. g.) *tersus*, p. 4; *Antepithecus innexus*, *interassus*, p. 5, *gradatus*, p. 6; *Gonopithecus* (n. g.) *trigonodontooides*, p. 6; *Henricosbornia alouatina*, p. 7, *subconica*, p. 8.
 (?) HYRACOIDEA.—*Oldfieldthomasia plicata*, p. 9; *Paracaelodus* (n. g. for *O. marginialis*), p. 9; *Eohyrax platyodus*, *isotemnoides*, p. 10.
 TYPOTHERIA.—*Phanophilus* (n. g.) *dorsatus*, p. 12; *Epipatriarchus* (n. g.) *bifidens*, p. 13, *innexus*, p. 16; *Cænophilus* (n. g.) *tripartitus*, p. 16; *Getohetherium* (n. g.) *tournoueri*, p. 17; *Tegehotherium* (n. g.) *burmeisteri*, p. 18; *Pseudotypotherium* (n. g.) *pulchrum*, p. 19; *Trachytypotherium superans*, *rectum*, p. 22, *disparile*, *vietum*, p. 23; *Xenotherium* (n. g.) *immersum*, p. 24; *Typotherium pseudopachygnathum*, p. 26, *eguiæ*, p. 27; *Progalæopithecus* (n. g.) p. 28, *fissurellatus*, p. 29, *tournoueri*, p. 30. [N.B. The *Galæopithecidae* are placed in the *Typotheria* !]
 TOXODONTIA.—*Stereotoxodon* (n. g.) *tehuelche*, p. 31.
 HIPPOIDEA.—*Nesohippus* (n. g.) *insulatus*, p. 33; *Interhippus phorcus*, p. 34; *Stilhippus* (n. g.) *deterioratus*, p. 35; *Perhippidion* (n. g.) *tetragonoides*, p. 36.
 CONDYLARTHRA.—*Didolodus dispar*, p. 38; *Periacrodon* (n. g. for *Polyacrodon lanciformis* Roth.), p. 39; *Oroacrodon*, for *Polyacrodon* Roth., 1898, nec *Polyacrodon* Jaecel, 1889, p. 40; *Notoprotopogonia* (n. g. for *Euprotopogonia patagonica*), p. 41; *Argyrolambda* (n. g.) *conidens*, p. 43; *Heterolambda* (n. g.) *lunulata*, p. 43; *Eulambda* (n. g. for *Josepholeidea aculea*), p. 45; *Ricardolydekkeria cinctula*, p. 46; *Lopho-*
 1904. [VOL. XLI.]

lambda (n. g. for *R. profunda*), p. 47; *Propantostylops* (n. g. for *Pantostylops minutus*), p. 48; *Hemistyllops* (n. g. for *Pantostylops incompletus*), p. 49, *paucicuspidatus*, *trigonostyloides*, p. 50; *Polystyllops* (n. g.) *progrediens*, p. 51.

PERISSODACTYLA.—*Adiantum patagonicus*, p. 52; *Theosodon karaikensis*, p. 54; *Paranauchenia* (n. g. for *Scalibrinitherium denticulatum*), p. 55; *Phenizauchenia* (n. g.) *tekuelcha*, p. 57; *Promacrauchenia* (n. g. for *Macrauchenia antiqua*), p. 58; *Euprotherotherium* (n. g.) *inaequifacies*, p. 59; *Protherotherium karaikense*, p. 60, *dichotomum*, *politum*, p. 61; *Lophogododon* (n. g.) *paranensis*, p. 62; *Licaphrium pyramidatum*, p. 63; *proximum*, p. 64; *Licaphrops* (n. g. for *Prolicaphrium festinum*), p. 64, *coalescens*, p. 65; *Prothoatherium plicatum*, p. 65; *Thoatherium velatum*, *karaikense*, p. 66, *bilobatum*, p. 67; *Diadiaphorus celops*, p. 67; *Proectocion* (n. g.), p. 68, *argentinus*, p. 69, *precisus*, p. 70; *Aragonia* (n. g.) *insulata*, p. 71.

ARTIODACTYLA.—*Listriodon bonariensis*, p. 71, *tarijensis*, p. 73; *Catagonus* (n. g.) *metropolitanus*, p. 73; *Dicotyles platensis*, p. 75; *Microtragulus* (n. g.) *argentinus*, p. 76.

AMBLIPODA.—*Trigonostylops columnifer*, p. 77, *coryphodontoides*, *germinalis*, p. 78; *Scabellia cyclogona*, p. 79; *Albertogaudrya separata*, *oxygona*, p. 80; *Astrapotherium karaikense*, p. 81; *Astrapothericulus emarginatus*, p. 82.

ANCYLOPODA.—*Colpodon plicatus*, p. 83; *Henricofilholia intercineta*, p. 84; *Pyrallaphodon* (n. g.) *pyriformis*, p. 85; *Amphitemnus* (n. g.) *nucleatus*, *transitorius*, p. 86; *Dialophus recticrista*, p. 87; *Toxotemnus* (n. g. for *Isotemnus lophiodontoides*), p. 87; *Plexotemnus* (n. g.) *complicatissimus*, p. 88; *Pleurostylodon irregularis*, p. 90, *limpidus*, *obscurus*, p. 91, *bifidus*, *neglectus*, p. 92; *Paratemnus* (n. g.) *geminatus*, p. 93; *Tychostylops simus*, p. 95; *Lophocelus* (n. g.) *macrostomus*, p. 96.

TILLODONTA.—*Notostylops brachycephalus*, p. 97, *promurinus*, p. 98; *Catastylops deflexus*, p. 99.

RODENTIA.—*Eosteiomys medianus*, p. 100; *Parasteiomys* (n. g.) *uniformis*, p. 101; *Protoacaremys amplus*, p. 101; *Disteiomys* (n. g.) *graciloides*, p. 102; *Paramyocastor* (n. g.) *intactus*, p. 103; *Eoctodon crassiusculus*, p. 103; *Sigmomys* (n. g.) *oppositus*, p. 103; *Simplimus* (n. g.) *indivisus*, p. 104; *Tetrastylus araucanus*, p. 104, *giganteus*, p. 105; *Archæocardia mustersiana*, p. 106; *Argyrolagus* (n. g.) *palmeri*, p. 106.

(?) PLAGIAULACOIDEA.—*Polydolops simplex*, p. 107; *Archæodolops* (n. g. for *P. clavulus*), p. 108; *Anisodolops* (n. g. for *P. serrifer*), p. 108; *Anadolops* (n. g.) *thylacoleoides*, p. 109.

MARSUPIALIA.—*Pilchenia* (n. g.) *lucina*, *lobata*, p. 110; *Progarzonia* (n. g.) *notostyloensis*, p. 111; *Clenia* (n. g.) *minuscule*, p. 111; *Didelphys abrupta*, *biforata*, p. 112, *perplana*, p. 113; *Hyperdidelphys* (n. g.) *acutidens*, p. 113; *Paradidelphys* (n. g.) *nodosa*, p. 114; *Cladodidelphys* (n. g.) *crucialis*, p. 115.

CREODONTIA, etc.—*Arminhierungia contigua*, p. 116; *Parahyæenodon* (n. g.) *argentinus*, p. 117; *Acrohyæenodon* (n. g.) *pungens*, p. 118.

CARNIVORA.—*Pachynasua* (n. g.) *clausa*, p. 119; *Pararctotherium* (n. g.) *enectum*, p. 120, *pamparum*, p. 121; *Proarctotherium* (n. g. for *A. vetustum*), p. 121; *Amphicyon argentinus*, p. 122; *Notamphicyon* (n. g.) *paranensis*, p. 122; *Smilodon crucians*, p. 123; *Felis propuma*, p. 123, *proplatensis*, p. 124.

EDENTATA.—*Rathymotherium* (n. g.) *perfectum*, p. 126; *Protamandua* (n. g.) *rothi*, p. 128; *Promyrmephagus* (n. g.) *euryarthrus*, p. 128, *dolichoarthrus*, p. 129; *Argyromanis* (n. g.) *patagonica*, p. 129; *Orthoarthrus* (n. g.) *mixtus*, p. 130; *Propreotherium* (n. g.) *desendense*, p. 131; *Prepootheriops* (n. g.) *megatheroides*, p. 132; *Megathericulus* (n. g.) *patagonicus*, p. 132; *Neonematherium* (n. g.) *flabellatum*,

p. 133; *Scelidotheriops* (n. g.) *avunculus*, p. 134; *Eumylodon bonariense*, p. 136; *Octomylodon* (n. g.) *aversus*, p. 137; *Palæhoplophorus meridionalis*, p. 137; *Plohophorus cuneiformis*, p. 138, *araucanus*, p. 139; *Dædicurus ensenadensis*, p. 139; *Eutatus præpampæus*, p. 140; *Epipeltephilus* (n. g.) *recurvus*, p. 140.

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504. ALCOCK, N. H. On Mammalian non-medullated nerve. J. Physiol. xxx, pp. xxxv & xxxvi.
505. BACKMUND, C. Entwicklung der Haare und Schweissdrüsen der Katze. Anat. Hefte. Arb. xxvi, pp. 315-383, pls. xi-xiv. [*Felidæ*.]
506. DAMANY, P. La cavité cotyloïde, evolution ontogénique comparée de sa profondeur chez l'Homme et les Animaux. J. Anat. Physiol. xl, pp. 387-413, figg.
507. DENNSTEDT, A. Die Sinus duræ matris der Haussäugethiere. Anat. Hefte. Arb. xxv, pp. 1-96, pls. i-iii.
508. GLAS, E. Ueber die Entwicklung und Morphologie der inneren Nase der Ratte. Anat. Hefte. Arb. xxv, pp. 273-341, pls. x-xxiv.
509. ILLING, G. Vergleichende Untersuchungen über die submaxillaren Speicheldrüsen der Haussäugethiere. Anat. Hefte. Arb. xxvi, pp. 385-526, pls. xv-xviii.
510. MACNAMARA, N. C. Beweisschrift betreffend die gemeinsame Abstammung der Menschen und der Anthropoiden Affen. Arch. Anthrop. xxxi, pp. 77-93, fig. [*Primates*.]
511. MAGNUS, R. Versuche am überlebenden Dünndarm von Säugethieren. Pt. I. Arch. Ges. Physiol. cii, pp. 123-151, figg.
512. MÜLLER, C. Beiträge zur vergleichenden Anatomie und Histologie der Prostata der Haussäugetiere, etc. Anat. Hefte. Arb. xxvi, pp. 527-572, pls. xix-xxiii.
513. MÜLLER, E. Beiträge zur Morphologie des Gefässsystems: II. Die Arterien der Säugetiere. Anat. Hefte. Arb. xxvii, pp. 71-242, pls. v-xvi.
514. SABIN, [Miss] F. R. On the development of the superficial lymphatics in the skin of the Pig. Amer. J. Anat. iii, pp. 183-195, figg.
515. SCHLOSSER, M. Die mumifizierte Tierwelt des alten Ägyptens. Arch. Anthrop. xxx, pp. 202-207.
516. VALEDINSKY, I. A. Zur Frage über die Nervenknotten im Herzventrikel einiger Säugetiere. Anat. Hefte. Arb. xxvii, pp. 285-294, pls. xix & xx.
517. WILSON, W. H. The immunity of certain desert Mammals to Scorpion venom. J. Physiol. xxxi, pp. 1-lii.

III. AVES.

BY

R. BOWDLER SHARPE, LL.D., &C.

CONTENTS.

	Page		Page
I. TITLES	2	Passeriformes (<i>continued</i>).	
II. SUBJECT INDEX.		Tyrannidæ	53
Faunistic	35	Pittidæ	54
Anatomy & Miscellaneous	36	Xenicidæ	54
III. SYSTEMATIC—		Hirundinidæ	54
Ratitæ.		Muscicapidæ	55
Rheiformes	37	Campophagidæ	55
Casuariiformes	37	Pycnonotidæ	55
Æpyornithiformes	37	Timeliidæ	56
Carinata.		Panuridæ	57
Tinamiformes	38	Troglodytidæ	57
Galliformes	38	Cinclidæ	57
Hemipodii	39	Mimidæ	57
Pteroclidiformes	39	Turdidæ	57
Columbiformes	40	Sylviidæ	59
Opisthocomiformes	40	Vireonidæ	60
Ralliformes	41	Ampelidæ	60
Podicipediformes	41	Dulidæ	60
Colymbiformes	41	Ptilogonatidæ	61
Spheniciformes	41	Prionopidæ	61
Procellariiformes	41	Laniidæ	61
Alciformes	42	Paridæ	61
Lariformes	42	Chamæidæ	62
Charadriiformes	42	Regulidæ	62
Gruiformes	44	Sittidæ	62
Ardeiformes	44	Certhiidæ	62
Anseriformes	44	Zosteropidæ	63
Pelecaniformes	45	Dicæidæ	63
Cathartiformes	45	Nectariniidæ	63
Accipitriformes	46	Meliphagidæ	63
Strigiformes	48	Mniotiltidæ	64
Psittaciformes	49	Motacillidæ	64
Coraciiformes	49	Alaudidæ	64
Trogones	51	Fringillidæ	66
Coccyges	51	Tanagridæ	68
Scansores	51	Ploceidæ	68
Piciformes	52	Icteridæ	69
Eurylamiformes	52	Oriolidæ	69
Passeriformes.		Dicruridæ	70
Formicariidæ	53	Eulabetidæ	70
Dendrocolaptidæ	53	Sturnidæ	70
		Ptilonorhynchidæ	70
		Paradisæidæ	70
		Corvidæ	70

INTRODUCTION.

ALTHOUGH the number of titles is somewhat less than in 1903, their perusal shews that some excellent memoirs have been published, while the standard works by Dr HARTERT, Prof. RIDGWAY, Prof. REICHENOW, and Captain SHELLEY, have all been advanced. The Recorder has again to thank Mr Chubb for his assistance.

I.—TITLES.*

1. *ADAMS, C. C. The migration route of Kirtland's Warbler (*Dendroica kirtlandi*). Bull. Michigan Ornith. Club v, pp. 14-21. [*Mniotiltidae*.]
2. ALDERSON, R. Nesting of the Rufous Dove (*Leptoptila reichenbachii*). Avicult. Mag. (2) ii, pp. 270-275. [*Columbiformes*.]
3. *ALLEN, G. M. The birds of New Hampshire. P. Manchester Inst. Arts & Sci. iv, pp. 23-222.
4. ALLEN, J. A. The case of *Megalestris* vs. *Catharacta*. Auk xxi, pp. 345-348. [*Lariformes*.]
5. —. Black-capped Petrel (*Æstrelata hesitata*) in New Hampshire. T. c. p. 383, pl. xxii. [*Procellariiformes*.]
ALLÉON, A. [Comte]. Obituary. [See LEVERKÜHN, P. (349).]
6. ALLISON, A. The birds of West Baton Rouge Parish, Louisiana. Auk xxi, pp. 472-484.
7. ANDERSON, M. P. & GRINNELL, J. Birds of the Siskiyou Mountains, California: a problem of distribution. P. Ac. Philad. 1903, pp. 4-15.
8. ANDRÉ, E. A Naturalist in the Guianas. London, 1904, 8vo, xiv + 310 pp. with thirty-four illustrations and a map.
9. ANDREWS, C. W. On the pelvis and hind-limb of *Mullerornis betsilei* M.-Edw. & Grand.: with a note on the occurrence of a Ratite bird in the Upper Eocene beds of the Fayum, Egypt. P. Zool. Soc. London 1904, i, pp. 163-171, pl. v, text-fig. 15. [*Æpyornithiformes*.]
10. APLIN, O. V. *Emberiza pusilla* near Rugby. Ibis 1904, pp. 306 & 307. [*Fringillidae*.]
11. —. Birds of Oxfordshire or Buckinghamshire. Zoologist 1904, pp. 75 & 76.
12. —. Notes on the ornithology of Oxfordshire. T. c. pp. 361-372.
13. —. On the breeding of the Black-necked Grebe (*Podiceps nigricollis*) in the British Islands. T. c. pp. 417-420. [*Podicipediformes*.]
14. ARRIGHI-GRIFFOLI, G. Note ed appunti di un cacciatore sui nostri uccelli migratori. Part II. Avicula viii, pp. 6-12, 75-77, 98-102, 135-140, 148-150.
15. —. Caccia alle Anitre con reti. T. c. pp. 20-23.
16. ARRIGONI DEGLI ODDI, E. Manuale di Ornitologia Italiana. Elenco descrittivo degli Uccelli stazionari o di passaggio finora osservati in Italia. Milano, 1904, 908 pp.
17. ARUNDEL, W. B. Ferruginous Duck (*Fuligula nyroca*) in Yorkshire. Zoologist 1904, p. 33. [*Anseriformes*.]
BAER, G. A. [See OUSTALET, E. (448).]

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

18. BAILEY, F. M. Additional notes on the birds of the Upper Pecos. Auk xxi, pp. 349-363. [*Charadriiformes*, *Galliformes*, *Trochili*, *Tyrannidae*, *Fringillidae*, *Motacillidae*, *Mimidae*, *Turdidae*.]
19. ——. Additions to Mitchell's list of the summer birds of San Miguel County, New Mexico. T. c. pp. 443-449. [*Tyrannidae*, *Fringillidae*.]
20. ——. Twelve Rock Wren Nests in New Mexico. Condor vi, pp. 68-70.
21. ——. A Dusky Grouse and her brood in New Mexico. T. c. pp. 87-89 cum fig.
22. BANGS, O. Two new subspecies of tropical American Tyrant-birds. P. Soc. Washington xvii, pp. 113 & 114. [*Tyrannidae*.]
23. BANNERMAN, D. A. Ornithological notes made during a trip to the West Indies. Zoologist 1904, pp. 228-230.
24. BARBOZA DU BOCAGE. Contribution à la Faune des quatre îles du Golfe de Guinée. J. Sci. Lisb. (2) vii, No. xxvi, Oiseaux, pp. 72-90.
25. BARNARD, C. A. Coomoooolaroo notes. Emu iv, pp. 67 & 68.
26. BARRETT-HAMILTON, G. E. H. A physiological theory to explain the winter-whitening of birds and mammals in snowy countries, and the most striking points in the distribution of white in vertebrates generally. Rep. Brit. Ass. 1903, pp. 698 & 699.
27. ——. On the sound produced by the wings of birds in flight. Ibis 1904, pp. 474 & 475.
- BARTELS, M. [See FINSCH, O. (188).]
28. BARTSCH, P. Notes on the Herons of the District of Columbia. Smithson. Collect. xlv, pp. 104-111, pls. xxxii-xxxviii.
- BATES, G. L. [See SHARPE, R. B. (592).]
29. BAU, A. Die Eier von *Larus audouini*. Ornith. Jahrb. xv, pp. 1-10, Taf. i. [*Lariformes*.]
30. ——. Nochmals *Erithacus cairii*. Ornith. Monber. xii, pp. 4-6. [*Turdidae*.]
31. BECK, R. H. Bird life among the Galapagos Islands. Condor vi, pp. 1-11. [*Mimidae*, *Pelecaniformes*.]
32. BEDDARD, F. E. A note upon the tongue and windpipe of the American Vultures, with remarks on the interrelations of the genera *Sarcorhamphus*, *Gypagus* and *Cathartes*. P. Zool. Soc. London 1903, ii, pp. 386-392, text-figg. 45-48. [*Cathartiformes*.]
33. ——. Exhibition and remarks on the brain of a Troupial (*Quiscalus versicolor*). Op. cit. 1904, ii, p. 2. [*Icteridae*.]
- 33A. ——. On the skull of the Cape Crowned Crane (*Balearica chrysopelegus*). T. c. p. 131. [*Ardeiformes*.]
34. BEEBE, C. W. Breeding of Lawrence's Warbler (*Helminthophila lawrencei*) in New York City. Auk xxi, pp. 387 & 388. [*Mniotiltidae*.]
35. BENSON, C. W. Some notes on Swiss birds observed in June, 1904. Zoologist 1904, pp. 423 & 424.
36. BENT, A. C. Nesting habits of the *Herodiones* in Florida. Auk xxi, pp. 20-29, 259-270, pls. ix & x, xix-xxi. [*Ardeiformes*.]

37. BERGE, R. Die Ringamsel im Erzgebirge. Ornith. Monber. xii, pp. 160-162. [*Turdidæ*.]
38. BERNARD, P. Réapparition du Jaseur de Bohème (*Ampelis garrulus*) dans le pays de Montbéliard. Ornith. xii, No. 4, pp. 565-567.
39. BERNEY, F. L. North Queensland notes on some migratory birds (March 1902-July 1904). Emu iv, pp. 43-47. [*Timeliidæ*, *Meropes*.]
40. BERRY, W. On the nesting of the Hawfinch (*Coccothraustes coccothraustes*) in Fifeshire. Ann. Scott. Nat. Hist. 1904, pp. 11-14. [*Fringillidæ*.]
41. BERTLING, A. E. L. On the hatching and rearing of the Brush Turkeys (*Talegalla lathamii*) at the Zoo. Avicult. Mag. (2) ii, pp. 294-297. [*Galliformes*.]
- 41A. BERTONI, A. DE W. Contribución para el conocimiento de las Aves del Paraguay. Anales Cient. Parag. Ser. I, No. 3, pp. 1-10, 1904. [*Turdidæ*, *Tanagridæ*, *Dendrocolaptidæ*, *Formicariidæ*, *Strigiformes*, *Columbiformes*.]
42. BESSERER, F. VON. *Numenius arcuatus* L. als Brutvogel in Bayern. Ornith. Jahrb. xv, pp. 108-113. [*Charadriiformes*.]
43. BETHAM, R. M. Notes on birds-nesting from Poona. J. Bombay Soc. xv, pp. 709-712.
44. BIANCHI, V. Compte-rendu du Musée Zoologique de l'Académie Impériale des Sciences pour l'année 1902. Annuaire Mus. St. Petersb. viii, pp. 1-52, 1903. [*Corvidæ*, *Emberizidæ*, *Alaudidæ*, *Certhiidæ*, *Timeliidæ*, *Accipitriformes*.]
- 44A. —. Note sur les formes du genre *Dendrocoptes*. Op. cit. ix, pp. 1-4. [*Pici*.]
45. —. Revision des genres et des espèces de la famille *Accentoridæ*. T. c. pp. 108-156. [*Turdidæ*.]
46. —. Note préliminaire sur les formes paléarctiques orientales du genre *Alauda* Linn. T. c. pp. xxii-xxxi. [*Alaudidæ*.]
47. —. Key to the Palearctic species of Larks of the genus *Otocoris*. Ibis 1904, pp. 370-372. [*Alaudidæ*.]
48. —. Uebersicht der Formen der Gattung *Ithaginis* Wagler. [Translation by R. Schmidt.] J. Ornith. 1904, pp. 70-86.
49. —. On a new species of Bunting. Bull. B. O. C. xiv, p. 80. [*Fringillidæ*.]
50. BICKERTON, W. A review of Hertfordshire Ornithology. Tr. Hertfordsh. Soc. xii, pp. 26-32.
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54. BLASIUS, R. Gustav Radde [obituary]. J. Ornith. 1904, pp. 1-49 [portrait].

55. BLATHWAYT, F. L. "Xanthochroism" in the Greenfinch (*Ligurinus chloris*). Zoologist 1904, p. 32. [*Fringillidæ*.]
- 55A. —. Little Owl (*Athene noctua*) and Waxwing (*Ampelis garrulus*) in Lincolnshire. T. c. pp. 74 & 75. [*Strigiformes*, *Ampelidæ*.]
56. —. Notes on the birds found on the coast of Somerset. T. c. pp. 81-95.
57. *BOARDMAN, S. L. The Naturalist of Saint Croix. Memoir of George A. Boardman, a selection from his correspondence and published writings, notices of friends and contemporaries, with his List of Birds of Maine and New Brunswick. Bangor, Maine, 1903, 8vo, xv + 311 pp.
BOCAGE. [See BARBOZA (24).]
58. BONHOTE, J. L. The European Goldfinch (*Carduelis elegans*). Avicult. Mag. (2) iii, pp. 21-23, with coloured plate. [*Fringillidæ*.]
59. —. The Bahama Amazon Parrot (*Chrysotis bahamensis*). Op. cit. ii, pp. 239-241, cum tab. [*Psittaci*.]
- 59A. BOTEZAT, E. Geschmacksorgane und andere nervöse Endapparate im Schnabel der Vögel. Biol. Centrbl. xxiv, pp. 722-736.
BOURDILLON, T. F. [See FERGUSON, H. S. (175).]
60. BOUSSAC, P. H. Les Anseridés dans l'Égypte Pharaonique. Le Naturaliste (2) No. 421, pp. 209-211. [*Anseriformes*.]
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ZARUDNY. [See SARUDNY, N. (549).]
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II. SUBJECT INDEX.

FAUNISTIC.

Palæarctic Region, see ARRIGONI (16), BIANCHI (47), DAMIANI (140), DRESSER (147), EHMEKE (159), FATIO (173), FRAISSE (194), GEYR (207), HARTERT (255), HAUER (277), HEGYFOKY (279), HELMS (288), HENNICKE (291), HERMAN (293), JOHANSON (316), KLEINSCHMIDT (330), KOLLIBAY (335), KORMOS (339), LETACQ (348), LINDNER (350), LOUDON (361), LUCIFERO (363), MACKAY (364), MADARASZ (370), OTTO (447), PEARSON (463), PICCHI (467), PUNGUR (481), REISER (506), SARUDNY (547), SCHMITZ (556), SCHUSTER (560), SNOUCKAERT (611), SÓOS (612), SUSHKIN (623), TALAMON (627), Talsky (628), Tschusi (646).

British Islands, see APLIN (11), BICKERTON (50), BLATHWAYT (55), BUTTERFIELD (90), CAMPBELL, J. M. (102), CLARKE (120), ELMS (164), EVANS, A. H. (169), FORREST (191), GURNEY (240), HARVIE-BROWN (272), HUGHES (302), JOURDAIN (322), KINNENAR (329), LAIDLAW (342), SALTER (536), SAXBY (553), TICEHURST (640), TOMISON (642), WARREN (660), WEBB (662).

Ethiopian Region, see ANDREWS (9), BOCAGE (24), ERLANGER (167), GRANT (220), HORSBRUGH (299), JACKSON (308), JÄGERSKIÖLD (313), NEUMANN (409), OBERHOLSER (438), REICHENOW (502), ROTHSCILD, N. C. (516), SHARPE (589), SHORTRIDGE (600), THOMASSET (637).

Indian Region, see FERGUSON (175), FINN (179), FULTON (201), GRANT (226), HARRINGTON (254), INGLIS (307), KERSHAW (327), MCGREGOR (384), MEYER (389), OATES (435), RIPPON (514).

Australian Region, see BERNEY (39), BULLER (82), CARTER (105), FULTON, R. (202), HALL (246), HARTERT (256), HILL (297), HUTTON (304), KEARTLAND (326), KILGOUR (328), LE SOUËF (347), LITTLER (353), MCCLYMONT (383), MILLIGAN (392), NORTH (430), ROTHSCHILD, W. (520), SMEDLEY (607), VIVIAN (657). Australian Ornithologists' Union. Hobart Congress. Emu iii, pp. 141-167, pls. viii & ix.

Nearctic Region, see ALLEN (3), ALLISON (6), BAILEY (18), CHAPMAN (108), DAWSON (141), EIFRIG (161), GRINNELL (233), HOFFMANN (298), JACOBS (311), JONES (320), KOPMAN (338), KUMLIEN (341), MAILLARD (377), MEARNES (387), MILLER (390), OBERHOLSER (436), OSGOOD (446), RHOADS (509), RICHARDSON (510), RIDGWAY (511), SCHUTZE (562), SILLOWAY (604), SNODGRASS (608), STOCKARD (614), STONE (615), SWARTH (625), TODD (641), TROTTER (644), TRUMBULL (645), WHELOCK (664), WIDMANN (669), WILLIAMS (670).

Neotropical Region, see ANDRE (8), BANNERMAN (23), BOWDITCH (63), BRUCH (73), CLARKE (118), GODMAN (214), GOELDI (216), HELLMAYR (280), IHERING (305), MADARASZ (367), MENEGAUX (388), NELSON (406), NICOLL (418), OBERHOLSER (436), OUSTALET (448), REED (493A), RIDGWAY (511), RILEY (512), SCOTT (570), VALLENTIN (653).

Galapagos Islands, see BECK (31), SNODGRASS (609).

Sandwich Islands, see BRYAN (75), FISHER, W. K. (184).

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ANATOMY AND MISCELLANEOUS.

Physiology, see GALBRAITH & SIMPSON (203), HARPER (253).

Anatomy, see BEDDARD (33), CORDS (132), D'HOLLANDER (144A), GRANT (221), HILLEL (297A), JAMMES (314), LÖNNBERG (356), MITCHELL (397), STREETER (619).

Osteology, see MARTIN (380), OORT (445), SHUFELDT (601).

Fossil Birds, see ANDREWS (9), LUCAS (362), MORGAN (402).

Embryology, see CAMERON (99).

Nidification, see BENT (36), BETHAM (43), EVANS (171), FERGUSON (175), FULTON, R. (202), GRANT (225), HARRINGTON (254), HEAD (278), HORSBRUGH (299), HOWARD (301), KOPMAN (338), MAZIMAN (382), NORTH (430), SETH-SMITH (578), STOCKARD (614), TERNIER (631), WARREN (659).

Oology, see BUCHANAN (78), CAMPBELL (101), GLADSTONE (213), NORTH (430), PEARSON (464), PROCTOR (479), REY (508), ROTHSCHILD, W. (531).

Classification, see POCHE (470), SHUFELDT (601).

Literature, see BOARDMAN (57), DEANE (142), HELLMAYR (285), PARROT (454), POCHE (470), TSCHUSI (647).

Hybrids, see FRITZ (196), GÜNTHER (238), NEWMAN (417), ROTHSCHILD (525), WHITMAN (668).

Habits, see GYNGELL (244), JACOBS (311), SALTER (537), SCHUTZE (562), SCOTT (571).

Flight, see BARRETT-HAMILTON (27), YOUNG (677B).

Colour-change, see BIRTWELL (52), BUTLER (84), MASCHA (381), PICCHI (468).

Bibliography, see LEVERKÜHN (349).

Bird Protection, see DUTCHER (154).

Distribution, see ANDERSON (7), BUTURLIN (94), GRINNELL (233).

Migration, see BERNEY (39), BUTLER, A. L. (89), CLARKE, W. E. (120), COOKE (128), HAIGH (245), JACOBS (311), KOPMAN (338), LAIDLAW (342), TAVERNER (629), WILSON (672A).

Bird Migration in Great Britain and Ireland. Sixth and final report of the Committee, consisting of Professor NEWTON (*Chairman*), Rev. E. P. KNUBLEY (*Secretary*), Mr JOHN A. HARVIE-BROWNE, Mr R. M. BARRINGTON, Mr A. H. EVANS, and Dr H. O. FORBES, appointed to work out the details of the Observations on the Migration of Birds at Lighthouses and Lightships, 1880-1887. Rep. Brit. Ass. 1903, pp. 289 & 290. [Cf. Zool. Rec. xxxix, Aves, p. 37.]

Statement furnished by Mr WM. EAGLE CLARKE. T. c. pp. 291-304. [*Sturnidæ*, *Corvidæ*.]

Food, see FORBES (189A).

III. SYSTEMATIC.

Sub-class RATITÆ.

Order RHEIFORMES.

Rheidæ of Patagonia, see SCOTT, W. E. D. (570).

Rhea americana and *R. darwini*, remarks on the eggs; ROTHSCHILD, Bull. B. O. C. xiv, p. 90.

Order CASUARIIFORMES.

Dromæus novæhollandiæ, remarks on the eggs; ROTHSCHILD, Bull. B. O. C. xiv, p. 90: *D. ater*. notes on; LE SOUËF, Emu iii, pp. 229-231.

Casuarus unappendiculatus mitratus, *C. u. suffusus*, *C. casuarus chimæra*, n. subspp., *C. doggetti*, *C. jamrachi*, and *C. hagenbecki*, n. spp., habitat unknown; ROTHSCHILD, Bull. B. O. C. xiv, pp. 38-40.

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Order ÆPYORNITHIFORMES.

Eremopezus, n. g. [Fossil] type *E. eocænus*, n. sp., Upper Eocene of the Fayum district, Egypt; ANDREWS, P. Zool. Soc. London 1904, i, pp. 168-171, text-figg. 15, a, b, c.

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Sub-class CARINATÆ.

Order TINAMIFORMES.

Tinamidæ of Patagonia, see SCOTT, W. E. D. (570): of Central America, see GODMAN (214).

Crypturus tataupa, breeding in captivity; SETH-SMITH, Avicult. Mag. (2) ii, pp. 285-292 cum tab.: *C. mexicanus*, figured; GODMAN, Biol. Centr.-Amer., Aves, iii, pl. 79.

Tinamus salvini Underw. = *T. fuscipennis* Salvad.; id. t. c. p. 450.

Calopezus elegans, breeding in captivity; SETH-SMITH t. c. pp. 104-106.

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Order GALLIFORMES.

Catheturus lathamii, notes on the species in confinement; ST. QUINTIN, Avicult. Mag. (2) ii, pp. 160-163: nesting habits; BERTLING, t. c. pp. 217 & 218: breeding in the Zoological Gardens, Regent's Park; id. t. c. pp. 294-297.

Pipile pipile, distinct from *P. cumanensis*. *P. nattereri*, notes on; HELLMAYR, Bull. B. O. C. xiv, pp. 59 & 60: GRANT, t. c. pp. 60 & 61.

Lagopus lagopus, note on; OSGOOD, North Amer. Fauna, No. 24, pp. 65 & 66: *L. rupestris nelsoni*, note on; id. t. c. pp. 66 & 67: *L. albus* var. *major*, n. subsp., Steppes of Akmolinsk, Orenburg, and Turgai; LORENZ, Ornith. Monber. xii, pp. 177 & 178: *L. leucurus altipetens*, in New Mexico at 12,500 feet; BAILEY, Auk xxi, pp. 251 & 352.

Tetrao urogallus, in Peebleshire; MARSHALL, Ann. Scott. Nat. Hist. 1904, p. 244: note on; FAWCETT, Tr. Weardale Club i, pt. ii, pp. 229-231: *T. tetrix* and allies; LÖNNBERG, Ornith. Monber. xii, pp. 105-109: *T. pinetorum*, n. sp., Sweden; id. t. c. p. 107: *T. mongolicus*, n. sp., Mongolia; id. t. c. pp. 107 & 108.

Tetrao tetrix × *Phasianus colchicus*, figured; FRITZE, Jahrb. Mus. Hannover 1904, pp. 1 & 2, taf. vii.

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Pternistes leucoscepus Muhamed-ben-abdullah, n. subsp., S. Somali-land; ERLANGER, Ornith. Monber. xii, p. 97: *P. l. holtemülleri*, n. subsp., Lake Region of S. Shoa; id. t. c. p. 98: *P. leucoscepus*, breeding in confinement; SETH-SMITH, Avicult. Mag. (2) ii, pp. 325-327: *P. leucoscepus infuscatus*, notes on; NEUMANN, J. Ornith. 1904, p. 350.

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Order HEMIPODII.

- Turnix worcesteri*, n. sp., Luzon; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 8, pl. 1, fig. 1; *T. whiteheadi*, figured; id. t. c. pl. 1, fig. 2.

Order PTEROCLIDIFORMES.

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Osteology of the *Columbiformes*; see MARTIN, R. (380): *Columbidae* of Patagonia; see SCOTT, W. E. D. (570).

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Order OPISTHOCOMIFORMES.

Opisthocomus cristatus, notes on the nestling; PYCRAFT, Avicult. Mag. (2) iii, pp. 60-63.

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Order PODICIPEDIFORMES.

- Pygopodes*, on the osteology and systematic position ; SHUFELDT, Amer. Natural. xxxviii, pp. 13-49, cum tab. figg. 1-24.
- Podicipedidae* of Central America ; see GODMAN (214).
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Order HESPERORNITHIFORMES.

- Hesperornis regalis*, note on a skeleton ; LUCAS, Smithson. Collect. xlv, p. 95, pl. xxvii.

Order SPHENISCIFORMES.

- Spheniscus magellanicus*, notes on ; VALLENTIN, Mem. Manchester Soc. xviii, pt. iii, pp. 24-26.
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Order PROCELLARIIFORMES.

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- Æstrelata fœa* in Madeira ; BUTTERFIELD, Bull. B. O. C. xiv, p. 50.
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Order ALCIFORMES.

- Uria troile*, in Berkshire ; NOBLE, Zoologist 1904, p. 116 : *U. troile californica*, breeding habits ; RAY, Auk xxi, pp. 431-434, pl. xxv.
U. ringia, near Cherbourg ; CORAINVILLE, Bull. Soc. Rouen (4) xxiii, pp. 30 & 31.

Order LARIFORMES.

- Hydrochelidon nigra surinamensis*, nesting habits ; CURRIER, Auk xxi, pp. 32 & 33.
Sterna vittata georgiae, n. subsp., S. Georgia ; REICHENOW, Ornith. Monber. xii, p. 47 : *S. macrura antistrophe*, n. subsp., Shores of Antarctic Continent ; id. t. c. p. 47 : *S. saundersi* on Naki Island, Sanani Island, off the coast of Syria ; STENHOUSE, Ibis 1904, pp. 31 & 32.
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- Chionis nasicornis*, n. sp., Heard Is. ; REICHENOW, Ornith. Monber. xii, p. 47.
- Hæmatopus ostralegus*, note on ; PATTEN, Zoologist 1904, pp. 431 & 432 : its powers of swimming ; id. Irish Natural. xiii, p. 295.
- Vanellus vulgaris*, difference in form of wing in the sexes ; FROHAWK, Ibis 1904, pp. 446-451 : on the Upper Chindwin ; HARINGTON, J. Bombay Soc. xv, p. 723.
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- Himantopus himantopus*, figured ; HERMAN, Aquila xi, tab. iv.
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- Hieräetus fasciatus minor*, n. subsp., from Africa (S. Arabia, Somali Land, Mozambique) ; ERLANGER, J. Ornith. 1904, pp. 185-187, taf. x, figg. 42 : *H. spilogaster*, ♂ ♀ ad. from S. Somali Land, figured ; id. t. c. taf. ix.
- Eutolmæetus minutus* Brehm., in N. Mongolia ; SUSHKIN, Bull. B. O. C. xiv, p. 46.
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Order STRIGIFORMES.

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- Asio magellanicus mesembrinus*, n. subsp., Costa Rica ; OBERHOLSER, P. U. S. Mus. xxvii, pp. 179 & 180 : *A. m. melancerus*, n. subsp., Guatemala and Mexico ; id. t. c. pp. 180 & 181 : *A. m. icelus*, n. subsp., Coast of California ; id. t. c. p. 185 : *A. m. lagophonus*, n. subsp., Washington to Alaska ; id. t. c. pp. 185–187 : *A. m. heterocnemis*, n. subsp., Labrador ; id. t. c. pp. 187 & 188 : *A. m. algistus*, n. subsp., N. W. coast region of Alaska ; id. t. c. p. 190.
- Bubo maculosus* and allies, *B. m. cinerascens* and *B. m. milesi* ; ERLANGER, J. Ornith. 1904, pp. 227–229.
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- Scops cypria*, figured ; MADARASZ, Ann. Mus. Hungar. ii, tab. xv.
- Asio leucotis nigrovertex*, n. subsp., Abyssinia ; ERLANGER, J. Ornith. 1904, pp. 233 & 234, figured ; id. t. c. taf. xix, fig. 1 : *A. l. leucotis*, figured ; id. t. c. taf. xix, fig. 2.
- Sceloglaux rufifacies*, n. sp., North Island, New Zealand ; BULLER, Ibis 1904, p. 639.
- Scotiapter nebulosa*, at Dedham, Massachusetts ; ALLEN, Auk xxi, p. 278.
- Athene noctua* and its allies, *A. n. glaux*, *A. n. plumipes*, *A. n. brama*, *A. n.*

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- Strix flammea splendens* and its allies, notes on; ERLANGER, J. Ornith. 1904, pp. 241-244.
- Aluco flammea* and its subspecies; ROTHSCILD, Bull. B. O. C. xiv, pp. 87-90.
- Strix stictica*, n. sp., Venezuela; MADARASZ, Ann. Mus. Hungar. ii, pp. 115 & 116.

Order PSITTACIFORMES.

- Cyclopsittacus festetichi* Madarasz = *C. diopthalmus* (H. & J.); ROTHSCILD & HARTERT, Ann. Mus. Hungar. i, p. 449 : *C. purpuratus* Madarasz = *C. edwardsi* Oust.; iid. t. c. p. 449.
- Psittuteles weberi*, notes on; SETH-SMITH, Avicult. Mag. (2) ii, pp. 246-250.
- Chrysotis guildingi*, figured; DUTTON, Avicult. Mag. (2) ii, pl. to p. 121.
- Chrysotis caymanensis*, note on; NICOLL, Bull. B. O. C. xiv, p. 94.
- Chrysotis bahamensis*, figured; BONHOTE, Avicult. Mag. (2) ii, pl. to p. 239.
- Poiocephalus flavifrons*, notes on; NEUMANN, J. Ornith. 1904, pp. 375 & 376 : *P. f. auranteiceps*, n. subsp., Gelo River, N. E. Africa; id. t. c. p. 376.
- Prioniturus waterstradti*, n. sp., S. Mindanao; ROTHSCILD, Bull. B. O. C. xiv, pp. 71 & 72.
- Palæornis columboides*, nesting habits; BOURDILLON, J. Bombay Soc. xv, p. 666.
- Agapornis pullaria*, breeding in confinement; PORTER, Avicult. Mag. (2) ii, pp. 350-352.

Order CORACIIFORMES.

Sub-order PODARGI.

- Batrachostomus moniliger*, note on the nesting; BOURDILLON, J. Bombay Soc. xv, p. 663.

Sub-order CORACIÆ.

- Coracias garrulus*, in Hants; CORBIN, Zoologist 1904, pp. 458 & 459.

Sub-order HALCYONES.

- Alcedinidæ*, their economic value in N. America; see SURFACE, H. A. (622).
- Alcedo ispida sibirica*, n. subsp., Barnaul, West Siberia; TSCHUSI, Ornith. Jahrb. xv, p. 99.
- Alcedo margelanica*, n. sp., Margelan, Ferghana; MADARASZ, Ann. Mus. Hungar. ii, p. 2.
- Myioceyx ruficeps* from Camaroons; SHARPE, Ibis 1904, p. 607.
- Halcyon bougainvillei*, n. sp., Bougainville Is., N. Solomon group;

ROTHSCHILD, Bull. B. O. C. xiv, pp. 5 & 6 : *H. owstoni*, n. sp., Asuncion Is., N. Mariannes ; ROTHSCHILD, Bull. B. O. C. xiv, pp. 6 & 7 : *H. generosa*, n. sp., Ceylon ; MADARASZ, Ann. Mus. Hungar. ii, p. 1 : *H. perpulchra*, n. sp., Malacca ; id. t. c. pp. 1 & 2 : *H. pileata*, in North Lakhimpur, Upper Assam ; STEVENS, J. Bombay Soc. xvi, pp. 154 & 155 : *H. australasia interposita*, n. subsp., S. W. Islands, Moluccas (Moa and Letti) ; HARTERT, Nov. Zool. xi, pp. 196 & 197 : *H. chloris* and allies ; id. t. c. pp. 197-199 : *H. enigma*, n. n., p. 199, Talaut Is. form.

Tanysiptera, nomenclature, re *T. dea* ; POCHE, Ornith. Monber. xii, p. 57 ; SALVADORI, Ibis 1904, p. 552-554.

Sub-order BUCEROTES.

Dichoceros bicornis, notes on ; FERGUSON, J. Bombay Soc. xv, pp. 659 & 660.

Meniceros bicornis, nesting habits ; OSBORN, J. Bombay Soc. xv, pp. 715 & 716.

Ortholophus cassini Finsch = *O. albocristatus* Cass., *O. finschi*, n. sp., Liberia ; SHARPE, Ibis 1904, p. 610.

Sub-order UPUPÆ.

Upupa epops in Cheshire ; OLDHAM, Zoologist 1904, p. 429.

Scoptelus brunneiceps, figured ; SHARPE, Ibis 1904, pl. xii.

Sub-order MEROPES.

Merops superciliosus donaldsoni, n. subsp., Bar Madu, Ganana river, Somali Land ; OBERHOLSER, P. U. S. Mus. xxvii, pp. 737 & 738 : *M. ornatus*, note on ; BERNEY, Emu iv, pp. 45 & 46.

Sub-Order TODI.

Todus todus is the proper name for the Jamaica Tody ; RILEY, Auk xxi, p. 486.

Sub-order CAPRIMULGI.

Nyctibius jamaicensis in Brazil, observations on habits ; GOELDI, Ibis 1904, pp. 513-518.

Phalaenoptilus nuttalli, notes on ; SWARTH, Cooper Ornith. Club, California, 1904, p. 15.

Antrostomus vociferus in Colorado ; BURNETT, Auk xxi, pp. 278 & 279.

Caprimulgus apatelius, n. sp., Abaya Lake, N. E. Africa ; NEUMANN, Ornith. Monber. xii, p. 143 : *C. binotatus* from Camaroons ; SHARPE, Ibis 1904, p. 612 : *C. manillensis celebensis* Grant, from Wetter Is. ; HARTERT, Nov. Zool. xi, pp. 203 & 204 : *C. nubicus* from Egypt ; N. C. ROTHSCCHILD, Bull. B. O. C. xiv, p. 91.

Sub-order CYPSELI.

Chætura stictolaema from Camaroons ; SHARPE, Ibis 1904, p. 612.

Apus melba tuneti, n. subsp., Tunis ; TSCHUSI, Ornith. Jahrb. xv, pp. 123 & 124 : *A. apus kollibayi*, remarks on ; SCLATER, Bull. B. O. C. xv, p. 13.

Cypselus batesi, n. sp., Camaroons ; SHARPE, Bull. B. O. C. xiv, p. 63 : *C. sladenæ*, n. sp., Fernando Po ; GRANT, Bull. B. O. C. xiv, p. 56.

Micropus pacificus, in Tasmania ; LEGGE, Emu iii, pp. 180 & 181.

Sub-order TROCHILI.

- Selasphorus platycercus* and *S. rufus*, at 12,600 feet in New Mexico ; BAILEY, Auk xxi, p. 354.
Microlyssa nom. emend pro *Bellona* Muls. and Verr. (nec Reichenb.) ; RILEY, t. c. p. 485.

Sub-Order COLII.

- Colius striatus* and its allies ; NEUMANN, J. Ornith. 1904, pp. 403-405.

Order TROGONES.

- Hapaloderma æquatoriale*, not distinct from *H. narina* ; SHARPE, Ibis 1904, p. 613.
Harpactes fasciatus [*fasciatus*], nesting habits ; BOURDILLON, J. Bombay Soc. xv, pp. 663 & 664.

Order COCCYGES.

Sub-order MUSOPHAGI.

- Turacus macrorhynchus*, egg described ; SETH-SMITH, Bull. B. O. C. xv, pp. 13 & 14 : nestling described ; id. t. c. pp. 13 & 14 ; PYCRAFT, t. c. p. 14 : breeding in confinement ; JOHNSTONE, Avicult. Mag. (2) iii, pp. 26-29, cum fig. : notes on the pterylosis and structure of the nestling-down ; PYCRAFT, t. c. pp. 55-63, cum tab. figg. 1-4.

Sub-order CUCULI.

- Cuculidæ*, their economic value in N. America ; see SURFACE, H. A. (622).
Cuculus canorus, habits of ; PAYNE, Zoologist 1904, p. 74 : its mimicry ; SCHENK, Aquila xi, pp. 369-374 ; GEBELL, t. c. pp. 377-379 : note on ; WILSON, Zoologist 1904, pp. 264 & 265 ; ELLISON, t. c. pp. 313 & 314 : near Aberdeen ; WILSON, Zoologist 1904, pp. 384 & 385 : *C. canorus rumenicus*, n. subsp., Roumania and Balkan Peninsula to the Caucasus ; TSCHUSI, Ornith. Jahrb. xv, pp. 121-123 : *C. canorus johanseni* ; TSCHUSI, op. cit. xiv, p. 165 = *C. c. telephonus* Heine ; HARTERT, Ibis 1904, p. 429.
Chrysococcyx rufomerus and allies ; HARTERT, Nov. Zool. xi, pp. 199-201.
Coccyzus minor shelleyi, nom. emend pro *C. dominicæ* Shelley (nec Linn.) ; RILEY, Smithson. Collect. xlvii, p. 285.
Urodynamis taitensis, breeding habits ; FULTON, Tr. N. Zealand Inst. (2) xix, pp. 213-248.
Centropus albidiventris, n. sp., Gizo Is., Solomon Islands ; ROTHSCHILD, Bull. B. O. C. xiv, p. 59 : *C. efulenensis*, n. sp., Camaroons ; SHARPE, Ibis 1904, p. 615 : *C. grilli* and *C. thierryi*, notes on ; NEUMANN, J. Ornith. 1904, pp. 390 & 381 : *C. g. cæruleiceps*, n. subsp., Grandjule Lake, N. E. Africa ; id. t. c. pp. 380 & 381.
Geococcyx californianus, habits ; FISHER, Condor vi, p. 80 : in Kansas ; SNOW, Auk xxi, p. 86.

Order SCANSORES.

Sub-order INDICATOIRES.

- Prodotiscus reichenowi*, n. sp., Moschi, German E. Africa ; MADARASZ, Ann. Mus. Hungar. ii, p. 206.

Sub-Order CAPITONES.

- Lybius undatus* and its allies ; NEUMANN, J. Ornith. 1904, pp. 387-390.
Melanobucco tsanæ, figured ; GRANT, Ibis 1904, pl. vi.
Barbatula chrysocoma and its allies ; NEUMANN, J. Ornith. 1904, pp. 391 & 392 : *B. c. schoana*, n. subsp., Zodgit, Shoa ; id. t. c. p. 391 : *B. flavisquamata* (Camaroons) distinct from *B. stellata* (Fernando Po) ; SHARPE, Ibis 1904, p. 618.

Order PICIFORMES.

Sub-order GALBULÆ.

- Urogalba paradisea*, notes on nomenclature ; POCHÉ, Ornith. Monber. xii, p. 57.
Galbalcyrhynchus leucotis innotatus, n. subsp., Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 445.

Sub-order PICI.

- Colaptes auratus*, abnormal growth of bill ; HUNT, Auk xxi, p. 384 : breeding habits ; STOCKARD, t. c. pp. 467 & 468 : *C. auratus luteus*, at Auburn, California ; FISHER, Condor vi, p. 172.
Dendropicus guineensis lepidus and its allies ; NEUMANN, J. Ornith. 1904, pp. 399-402 : *D. guineensis zechi*, n. subsp., Togo Land ; id. t. c. p. 400.
Melanerpes formicivorus aculeatus, notes on ; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 13 & 14 : *M. portoricensis*, abnormal bill ; BOWDISH, Auk xxi, pp. 53-55, pl. xi.
Centurus carolinus, nesting habits in Mississippi ; STOCKARD, Auk xxi, pp. 466 & 467.
Dendrocopos major, in Roxburghshire ; SIMPSON, Ann. Scott. Nat. Hist. 1904, pp. 126 & 127 : in the Outer Hebrides ; MACKENZIE, t. c. pp. 188 & 189.
D. minor morgani, n. subsp., S. W. Persia ; SARUDNY & LOUDON, Ornith. Jahrb. xv, p. 227.
Dendrocoptes medius caucasicus, n. subsp., Caucasus ; BIANCHI, Annuaire Mus. St. Petersb. ix, p. 4.
Dryobates arizonæ, notes on ; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 11 & 12.
Picoides arcticus, at Wellfleet, Massachusetts ; NICHOLS, Auk xxi, p. 81.
Dendromus permistus and its allies ; NEUMANN, J. Ornith. 1904, pp. 392-394 : *D. p. angolensis*, Angola, *D. p. togoensis*, Togo Land, n. subspp. ; id. t. c. pp. 393 & 394 : *D. nubicus* and *D. neumanni*, notes on ; id. t. c. pp. 394 & 395.
Iyngipicus obsoletus and its allies ; NEUMANN, J. Ornith. 1904, pp. 402 & 403 : *I. o. nigricans*, n. subsp., Uma River, N. E. Africa ; id. t. c. p. 402 : *I. o. heuglini*, n. subsp., Bogos Land ; id. t. c. pp. 402 & 403.
Ceophlæus pileatus, breeding habits in Mississippi ; STOCKARD, Auk xxi, pp. 463-466.
Iynx torquilla, in East Lothian ; EVANS, Ann. Scott. Nat. Hist. 1904, p. 244 : *I. pectoralis* Vig. = *I. ruficollis* Wagl. ; HELLMAYR, J. Ornith. pp. 307 & 308. [Cf. RICHMOND, Auk xviii, p. 179, 1900.]

Order EURYLÆMIFORMES.

- Serilophus lunatus rothschildi*, figured ; HARTERT, in Wytsman's 'Genera Avium.' Part I, 1904.

Order PASSERIFORMES.

Family FORMICARIIDÆ.

- Thamnophilus paraguayensis*, **n. sp.**, W. Paraguay ; HELLMAYR, Bull. B. O. C. xiv, pp. 53 & 54 : *T. juruanus*, **n. sp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 439.
- Dysithamnus aroyae*, **n. sp.**, S. E. Peru ; HELLMAYR, Bull. B. O. C. xiv, pp. 52 & 53.
- Myrmotherula pyrrhonota amazonica*, **n. subsp.**, Rio Juruá ; IHERING, Revist. Mus. Paulista vi, p. 440 : *M. brevicauda juruana*, **n. subsp.**, Rio Juruá, Southern Brazil ; id. t. c. pp. 440 & 441 : *M. garbei*, **n. sp.**, Rio Juruá ; id. t. c. p. 441.
- Formicivora orenocensis*, **n. sp.**, Orinoco and Caura Rivers, Venezuela ; HELLMAYR, Bull. B. O. C. xiv, p. 54.
- Drymophila juruana*, **n. sp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 442.
- Phlegopsis*, notes on the genus ; HELLMAYR, Ornith. Monber. xii, pp. 53-55 : *P. paraensis*, **n. sp.**, Pará ; id. t. c. p. 55.

Family DENDROCOLAPTIDÆ.

- Upucerthia baeri*, **n. sp.**, Lara, Tucuman ; OUSTALET, Bull. Mus. Paris 1904, pp. 43 & 44.
- Siptornis hilereti*, **n. sp.**, Tucuman ; OUSTALET, Bull. Mus. Paris 1904, p. 44 : *S. lilloi*, **n. sp.**, Tucuman ; id. t. c. pp. 44 & 45.
- Dendrorhina ocellata juruana*, **n. subsp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, pp. 436 & 437.
- Dendrocolaptes juruanus*, **n. sp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, pp. 437 & 438.
- Dendrocincla*, review of the species ; OBERHOLSER P. Ac. Philad. 1904, pp. 447-463 : *D. anabatina typhla*, **n. subsp.**, Yucatan : id. t. c. pp. 452 & 453 : *D. enalincia*, **n. sp.**, S. E. Brazil ; id. t. c. pp. 454 & 455 : *D. ridgwayi*, **n. sp.**, Costa Rica ; id. t. c. pp. 458 & 459 : *D. meruloides aphanota*, **n. subsp.**, Tobago ; id. t. c. pp. 460 & 461 : *D. homochroa acedesta*, **n. subsp.**, Panama ; id. t. c. pp. 462 & 463.

Family TYRANNIDÆ.

- Tyrannidae*, notes on the systematic arrangement ; IHERING, Auk xxi, pp. 313-322.
- Copurus funebris* Cab. & Heine, from San Paulo ; HELLMAYR, Bull. B. O. C. xiv, p. 61.
- Muscisaxicola morenoi*, **n. sp.** ; BRUCH, Revist. Mus. La Plata xi, p. 256.
- Serphophaga cinerea cana*, **n. subsp.**, Santa Marta, U. S. Colombia ; BANGS, P. Soc. Washington xvii, pp. 113 & 114 : *S. paramba*, **n. sp.**, Paramba, N. W. Ecuador ; HELLMAYR, Bull. B. O. C. xiv, pp. 54 & 55.
- Ornithion pusillum juruanum*, **n. subsp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 431.
- Todirostrum cinereum finitimum*, **n. subsp.**, Tabasco, Mexico ; BANGS, P. Soc. Washington xvii, p. 114.
- Pitangus caymanensis*, **n. sp.**, Grand Cayman Is. W. I. ; NICOLL, Ibis 1904, pp. 582 & 583.
- Myiodynastes luteiventris*, notes on ; SWARTH, Cooper Ornith. Club, California 1904, pp. 21 & 22.
- Empidonax minimus*, on Grand Cayman Island ; NICOLL, Bull. B. O. C. xiv, p. 95 : id. Ibis 1904, p. 582 : *E. difficilis*, breeding in New Mexico at 11,000 feet ; BAILEY, Auk xxi, p. 355.

Empidonax griseus Brewst. = *E. canescens* Salvin & Godman; NELSON, Auk xxi, p. 80.

Contopus virens, its song; OLDYS, Auk xxi, pp. 270-274.

Contopus pertinax pallidiventris, breeds at 8,000 to 10,000 feet; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 24 & 25.

Myiarchus, a revision of the North American mainland species; NELSON, P. Soc. Washington xvii, pp. 21-50: *M. lawrencei bangsi*, n. subsp., Boquete, Panama; id. t. c. p. 45: *M. lawrencei querulus*, n. subsp., Michoacan, Mexico; id. t. c. p. 47: *M. lawrencei tresmariae*, n. subsp., Maria Madre Is., Tepic; id. t. c. p. 49: *M. brunneiceps* Lawr. from Panama = *M. nigriceps*; id. t. c. p. 50: *M. oberi nugator*, n. subsp., Dominica and Santa Lucia; RILEY, Smithson. Collect. xvii, pp. 275 & 276: *M. lawrencei olivascens*, notes on; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 22 & 23.

Tyrannus tyrannus, in San Miguel Co., New Mexico; BAILEY, Auk xxi, p. 446.

Family PITTIDÆ.

Pitta cyanoptera, breeding in Upper Burma; EVANS, J. Bombay Soc. xvi, pp. 171 & 172: *P. anerythra pallida*, n. subsp., Bougainville Isl. N. Solomon group; its egg described; ROTHCHILD, Bull. B. O. C. xiv, pp. 7 & 8: *P. reichenowi*, from Camaroon; SHARPE, Ibis 1904, p. 621: *P. annamensis*, figured; OUSTALET, Arch. Mus. Paris (4) v, pl. 5 [1903].

Family XENICIDÆ.

Xenicus stokesi distinct from *X. longipes* and *X. gilviventris*; GRANT, Bull. B. O. C. xv, pp. 15 & 16.

Family HIRUNDINIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, Pt. III, pp. 23-103.

Chelidonaria urbica at Wexford, Ireland, on the 10th of November; JOHNSON, Irish Natural. xiii, p. 48.

Chelidon urbica at Eastbourne in December; MORRIS, Zoologist 1904, p. 32: breeding in September and observed at Scarborough on December 16th, 1900; GYNGELL, Zoologist 1904, p. 73.

Chelidon urbica, not *C. lagopus*, in the Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 46: *C. dasypus* from Calayan Island, Philippines; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 33.

Clivicola riparia from Calayan Isl., Philippines; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 33.

Hirundo rustica, distribution in Hungary in 1898; PUNGUR, Aquila xi, pp. 1-249, with two maps; HEGYFOKY, t. c. pp. 250-256: *H. rustica sawitzkii*, n. subsp., Turkestan; LOUDON, Ornith. Jahrb. xv, pp. 54-56: *H. rothschildi*, n. sp., Kaffa, N.E. Africa; NEUMANN, Ornith. Monber. xii, p. 143: *H. albigularis microptera*, n. subsp., N. Angola; HARTERT, Bull. B. O. C. xiv, pp. 73 & 74: *H. striolata* (!) in Calayan Island, Philippine Archipelago, notes on; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 34.

Lamprochelidon, n. g., type *L. euchrysea* (Gosse); RIDGWAY, Birds, North & Middle America iii, pp. 100 & 101.

Stelgidopteryx salvini, n. sp., S. W. Mexico and Guatemala; RIDGWAY, t. c. pp. 62 & 63.

- Progne subis*, notes on; JACOBS, Pennsylv. Dep. Agric. i, No. 10, pp. 27-30, pls. 1 & 2.
- Psalidoprocne holomelæna massaica*, n. subsp., Mts. of East Africa; NEUMANN, Ornith. Monber. xii, p. 144: *P. orientalis reichenowi*, n. subsp., Loango Coast; id. t. c. pp. 144; *P. orientalis oleaginea*, n. subsp., Kaffa, N. E. Africa; id. t. c. p. 144: *P. nitens centralis*, n. sp., Ituri River; id. t. c. p. 144.

Family MUSCICAPIDÆ.

- Alseonax fantisiensis* from Camaroon; SHARPE, Ibis 1904, p. 623.
- Bradyornis benguellensis*, note on; SHARPE, Ibis 1904, p. 317.
- Muscicapa atricapilla*, in Dumfriesshire; GLADSTONE, Ann. Scott. Nat. Hist. 1904, p. 188.
- Pedilorchynchus camerunensis* and *P. stuhlmanni* probably = *P. comitatus*; SHARPE, Ibis 1904, p. 624.
- Cyornis hyacinthina kühni*, n. subsp., Wetter Isl. Moluccas; HARTERT, Nov. Zool. xi, p. 204.
- Petræa goodenovi* and *P. ramsayi*, notes on; MILLIGAN, Emu iv, p. 50.
- Polioptila luteola* in Eastern Minusinsk; SUSHKIN, Bull. B. O. C. xiv, p. 46.
- Gerygone everetti* and its allies; HARTERT, Nov. Zool. xi, pp. 204 & 205: *G. kisserensis sequens*, Roma, Isl. Moluccas; id. t. c. p. 205.
- Hylota violacea* distinct from *H. flaviventris* (*flavigaster*! auct.); SHARPE, Ibis 1904, p. 625.
- Cyanoptila cyanomelæna*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 5 & 6.
- Tarsiger guttifer* and *T. orientalis*, figured; REICHENOW, Vög. Africas iii.
- Chloropeta natalensis major*, n. subsp., N. Angola; HARTERT, Bull. B. O. C. xiv, p. 73.
- Megabias æquatorialis*, n. sp., Uganda; JACKSON, Bull. B. O. C. xv, p. 11.
- Smithornis capensis albigularis*, n. subsp., N. Angola; HARTERT, Bull. B. O. C. xiv, p. 73.
- Chelidorhynchus hypoxanthum*, probable occurrence at Dibrugarh during the cold season; STEVENS, J. Bombay Soc. xvi, p. 155.
- Trochocercus reichenovi*, n. sp., Fanti country, W. Africa; SHARPE, Ibis 1904, p. 630.
- Rhipidura preissi* and *R. albiscapa*, notes on; MILLIGAN, Emu iv, p. 50: *R. rufiventris pallidiceps*, n. subsp., Wetter Isl., Moluccas; HARTERT, Nov. Zool. xi, p. 206: *R. reichenowi* Finsch = *R. elegantula* Sharpe; id. t. c. p. 206: *R. intermedia* North, from N. E. Queensland, notes on; SCLATER, Bull. B. O. C. xiv, p. 8: HARTERT, t. c. p. 10.
- Terpsiphone paradisi* (figg. 9 & 10), *T. princeps* (figg. 11 & 12), eggs figured; DRESSER, Ibis 1904, pl. x.
- Cryptolopha erythraea*, n. sp., Bogos Land; SALVADORI, Boll. Mus. Torino xix, No. 464.
- Monarcha kisserensis* = *M. cinerascens*; HARTERT, Nov. Zool. xi, p. 207.
- Stoparola panayensis nigriloris*, n. subsp., Mindanao; HARTERT, Bull. B. O. C. xiv, p. 80.

Family CAMPOPHAGIDÆ.

- Pericrocotus cinereus*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 13 & 15.

Family PYCNONOTIDÆ.

- Hypsipetes fugensis* has a scutellated tarsus, as also *H. amaurotis*, and they probably belong to a different genus; MCGREGOR, Bull. Philipp.

- Mus. No. 4, pp. 31 & 32: *H. amaurotis*, eggs figured; DRESSER, Ibis 1904, p. 282, pl. vii, figg. 6 & 8.
- Iole holti binghami*, notes on; HARTERT, Ibis 1904, p. 543.
- Criniger propinquus*, n. sp., Tonkin; OUSTALET, Arch. Mus. Paris (4) v, pp. 76 & 77 (1903).
- C. verreauxi ndussumensis*, n. subsp., Equatorial Africa; REICHENOW, Vög. Africas iii, p. 383.
- Bleda batesi* Sharpe = *B. indicator*; id. t. c. p. 390: *B. poliocephala*, figured; id. t. c.
- Andropadus insularis somaliensis*, n. subsp., S. Somali-land (Barawa); REICHENOW, J. Ornith. 1904, p. 133: *A. oleagineus* Peters = *A. insularis*; REICHENOW, Vög. Afrikas iii, p. 408: *A. liberiensis*, Reichenow = *A. gracilirostris*; id. t. c. p. 411: *A. poensis* (Alexander), *A. percevali* (Neumann) = *A. gracilirostris*; REICHENOW, t. c. p. 411: *A. marwiti* Reichenow = *A. zombensis*; id. t. c. p. 413: *A. cameroonensis* Reichenow = *A. curvirostris*; id. t. c. p. 413: *A. montanus*, figured; id. t. c.
- Eurillus efulenensis*, n. sp., Camaroon; SHARPE, Ibis 1904, p. 637.
- Phyllastrephus harterti* (Reichenow) = *P. simplex*; REICHENOW, Vög. Afrikas iii, p. 394: *P. zambesiæ* (Shelley) = *P. occidentalis*; id. t. c. p. 397: *P. centralis* (Reichenow) = *P. occidentalis*; id. t. c. p. 397: *P. tenuirostris* (Fischer & Reichenow) = *P. flavostriatus*; id. t. c. p. 399: *P. leucolæma* (Sharpe) = *P. albigularis*; id. t. c. p. 400: *P. capensis suahelicus*, n. subsp., Central East Africa; id. t. c. p. 405: *P. rufescens* Hartlaub, *P. sharpei* Shelley and *P. pauper* Sharpe = *P. strepitans*; REICHENOW, t. c. p. 405: *P. chlorigula*, figured; id. t. c.
- Pycnonotus viridescens*, n. sp., Camaroon; SHARPE, Ibis 1904, p. 638: *P. leucotis*, eggs figured; DRESSER, Ibis 1904, p. 281, pl. vii, figg. 4 & 5.

Family TIMELIIDÆ.

- Chætops kilimensis*, n. sp., Moschi, German E. Africa; MADARASZ, Ann. Mus. Hungar. ii, p. 204.
- Cinclosoma punctatum*, notes on the species in captivity; PHILLIPPS, Avicult. Mag. (2) ii, pp. 149-160.
- Trochaloxypterus holerythrops*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 83: *T. ramsayi*, n. sp., Karennee; GRANT, Bull. B. O. C. xiv, pp. 92 & 93.
- Argya squamiceps yemensis*, n. subsp., Yemen, S. Arabia; NEUMANN, Ornith. Monber. xii, pp. 29 & 30.
- Dryonastes maesi* (fig. 1) and *D. lugens* (fig. 2), figured; OUSTALET, Arch. Mus. Paris (4) v, pl. vi.
- Crateropus*, review of the genus; NEUMANN, J. Ornith. 1904, pp. 548-555: *C. buxtoni* Sharpe = *C. cinereus* Heugl.; id. t. c. p. 548: *C. plebeius emini*, n. subsp., German East Africa; id. t. c. p. 549: *C. leucocephalus abyssinicus*, N. and C. Abyssinia; id. t. c. p. 550: *C. platycercus togensis*, n. subsp., Togo Land; id. t. c. p. 551.
- Cinclorhamphus cruralis*, note on; BERNEY, Emu iv, p. 44.
- Pseudototharrhaleus unicolor*, n. sp., Mindanao; HARTERT, Bull. B. O. C. xiv, p. 74.
- Turdinus pumilus*, n. sp., Bipindi, Camaroons; REICHENOW, Ornith. Monber. xii, p. 28.
- Bathmedonia*, nom. emend. pro *Bathmocercus* Reichenow (nec Fitz.); REICHENOW, J. Ornith. 1904, p. 134.
- Stachyris binghami*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 84.
- Pterythius ricketti*, n. sp., S. China; GRANT, Bull. B. O. C. xiv, p. 92.

Family PANURIDÆ.

Panurus biarmicus, figured; HERMAN, Aquila xi, tab. iii: *P. biarmicus occidentalis*, n. subsp., S. France, Spain, Italy; TSCHUSI, Ornith. Jahrb. xv, p. 228.

Family TROGLODYTIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 473-674.

Heleodytes brunneicapillus, in Lower California; SWARTH, Condor vi, pp. 17-19: unusual nesting site; DAGGETT, t. c. p. 24.

Thryothorus consobrinus, n. sp., Venezuela; MADARASZ, Ann. Mus. Hungar. ii, p. 115: *T. genibarbis juruanus*, n. subsp., Rio Juruá, Southern Brazil; IHERING, Revist. Mus. Paulista vi, p. 431.

Telmatodytes palustris thryophilus is of Oberholser, not of Ridgway, as stated in Zool. Rec. xi, Aves, p. 57.

Troglodytes musculus acosmus, n. subsp., Central Chile; OBERHOLSER, P. U. S. Mus. xxvii, p. 204: *T. m. atopus*, n. subsp., Santa Marta region, Colombia; id. t. c. p. 207: *T. m. enochus*, n. subsp., Coast region of Central Peru; id. t. c. pp. 207 & 208.

Thryorchilus, n. g. type *T. browni* (Bangs); id. t. c. p. 198.

Urocichla oatesi, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 83.

Salpinctes obsoletus, breeding habits; RAY, Auk xxi, pp. 440-442, pl. xxviii, fig. 1.

Family CINCLIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 675-682.

Cinclus cinclus bianchii, n. subsp., Sayan Mts. (89°-94° E. long.), *C. c. middendorffi*, n. subsp., C. Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 43: *C. baicalensis*, in the Sayan Mts.; id. t. c. p. 44: *C. cinclus sardus*, n. subsp., Sardinia; HARTERT, Bull. B. O. C. xiv, p. 51.

Family MIMIDÆ.

Nesomimus bauri, note on; BECK, Condor vi, pp. 5 & 6, cum fig.

Harporhynchus curvirostris and *H. curvirostris palmeri*, notes on the eggs; CLARK, Auk xxi, pp. 214-217, pl. xviii, figg. 1 & 2.

Toxostoma lecontei, notes on; GILMAN, Condor vi, pp. 95-98.

Myiadestes townsendii, note on; BAILEY, Auk xxi, pp. 362 & 363.

Family TURDIDÆ.

Geocichla gurneyi otomitra, n. subsp., Konde Land; REICHENOW, Ornith. Monber. xii, p. 95.

Geocichla peronii audacis distinct from *G. peronii*; HARTERT, Nov. Zool. xi, pp. 208 & 209: *G. cyanonota*, notes on the species in confinement; PHILLIPPS, Avicult. Mag. (2) ii, pp. 179-188 cum tab.

Turdus cabanisi from Deelfontein, W. Cape Colony; SHARPE, Ibis 1904, p. 320: *T. viscivorus*, its nesting; TERNIER, Ornith. xii, No. 4, pp. 571 & 572: *T. ruficollis* and *T. atrigularis*, in the Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 46: *T. alpestris*, in the Hartz Mts.; BERGE, Ornith. Monber. xii, pp. 160-162: *T. musicus* and *T. iliacus*, nomenclature; SALVADORI, Ibis 1904, pp. 551 & 552: ANON. t. c. pp. 665-667: *T. nyikæ*, Nyika Highlands, Nyasa Land; REICHENOW, Ornith. Monber. xii, p. 95.

Hylocichla guttata pallasii, in Eastern Massachusetts in winter; BLAKE, Auk xxi, p. 283

- Petrophila gularis*, in Burma ; MACDONALD, J. Bombay Soc. xv, p. 727.
- Accentor*, with six species and subspecies ; BIANCHI, Annuaire Mus. St. Petersb. ix, pp. 12-21, 49.
- A. collaris tibetanus*, n. subsp., E. Tibet ; id. t. c. p. 21.
- Spermolegus*, with five species ; id. t. c. pp. 21-37, 49.
- Prunella* Vieill. 1816 vice *Tharrhaleus* Kaup 1829, 6 species ; id. t. c. pp. 37-47, 49.
- Aprunella*, n. gen. type *A. immaculata* (Hodgs.) ; id. t. c. pp. 47-49 : *A. collaris reiseri*, remarks on ; SCLATER, Bull. B. O. C. xv, p. 13 : *A. modularis blanfordi*, n. subsp., S. W. Persia ; SARUDNY, Ornith. Monber. xii, pp. 164 & 165.
- Chimarrhornis leucocephalus*, eggs figured ; DRESSER, Ibis 1904, p. 281, pl. vii, figg. 1 & 3.
- Cyanecula suecica*, near London ; CHUBB, Zoologist 1904, pp. 262 & 263 : *C. wolff*, note on ; NICOLL, t. c. p. 263 : at Scarborough ; NELSON, t. c. p. 31 : *C. wolff magna*, n. subsp., S. W. Persia ; SARUDNY & LOUDON, Ornith. Jahrb. xv, p. 225.
- Hodgsonius phanicroides*, eggs figured ; DRESSER, Ibis 1904, pl. iii, fig. 2.
- Calliope calliope*, in the Philippines ; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 31.
- Luscinia luscinia* (L.) and *L. minor* (L.), notes on synonymy ; REICHENOW, Ornith. Monber. xii, pp. 1 & 2 : KLEINSCHMIDT, t. c. pp. 42-46 : habits ; HELMS, t. c. pp. 58-60.
- Aëdon luscinia*, in Sicily ; MARINUZZI, Avicula viii, pp. 17-20.
- Ruticilla semenowi*, n. sp., Orenburg district ; SARUDNY, Ornith. Jahrb. xv, pp. 213 & 214 : *R. titys*, in Moray ; MUIRHEAD, Ann. Scott. Nat. Hist. 1904, p. 55.
- Erythacus* [*Phœnicurus*] *titys*, and *E. phœnicurus*, notes on ; REICHENOW, Ornith. Monber. xii, pp. 2 & 3 ; *E. algeriensis*, n. sp., Algeria, *E. moussieri*, nestling described ; KLEINSCHMIDT, Ornith. Monber. xii, p. 197.
- Erythacus*, notes on the Robins of Madeira and the Azores ; NICOLL, Ibis 1904, pp. 555 & 591 : *E. rubecula*, nesting in a tree ; ELLISON, Zoologist 1904, pp. 190, 191, & 312 : BENTHAM, t. c. p. 263 : *E. cairii*, notes on ; BAU, Ornith. Monber. xii, pp. 4-6 : GENGLER, t. c. pp. 21 & 22 : BERLEPSCH, t. c. p. 36 : KLEINSCHMIDT, t. c. pp. 55 & 56 : *E. gaetkei*, n. form, Norway (Heligoland, migration) ; notes on *E. suecicus* and allies ; KLEINSCHMIDT, J. Ornith. 1904, pp. 302-306.
- Erythropygia plebeia*, n. sp., Masinde, E. Africa ; REICHENOW, Ornith. Monber. xii, pp. 27 & 28 : *E. brunneiceps soror*, n. subsp., Little Arusha Land, E. Africa ; REICHENOW, Ornith. Monber. xii, p. 95 : *E. hartlaubi* and *E. vulpina*, figured ; REICHENOW, Vög. Afrikas iii.
- Alethe poliothorax*, figured ; REICHENOW, Vög. Afrikas iii, tab.
- Pratincola rubetra dalmatica*, notes on ; KOLLIBAY, J. Ornith. 1904, pp. 100 & 101 : *P. dueotiae*, nest and eggs from Fuerteventura Is. ; HARTERT, Bull. B. O. C. xiv, p. 79.
- Myrmecocichla melanura* from the Egyptian Soudan ; N. C. ROTHSCHILD, Bull. B. O. C. xiv, p. 91.
- Poliocichla pollux* and its allies, *P. cinerea* and *P. schlegeli* ; SHARPE, Ibis 1904, pp. 324 & 325.
- Saxicola gaddi*, n. sp., S.W. Persia ; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 219 & 220 : *S. amphileuca* and *S. melanoleuca*, notes on ; KOLLIBAY, J. Ornith. 1904, pp. 80-121 : *S. hellmayri*, *S. lübberti*, and *S. falkensteini*, notes on ; SHARPE, Ibis 1904, p. 327 : *S. monticola*, description of plumages ; id. t. c. pp. 327-334 : *S. equatorialis* and allies ; id. t. c. pp. 333 & 334 : *S. stapazina* and *S. occidentalis*, their synonymy ; SALVADORI, Ibis 1904, pp. 75-78 : *S. ananthe*, in the Philippine Islands [Calayan, Oct. 24] ; MCGREGOR, Bull. Philipp.

- Mus., No. 4, p. 27 : *S. galtoni omoensis*, n. subsp., Omo River, N. E. Africa; NEUMANN, Ornith. Monber. xii, p. 163.
Sialia sialis, unusual nesting-site; BRYANT, Auk xxi, pp. 390 & 391 : *S. arctica*, breeding in New Mexico at 10,300 feet; BAILEY, t. c. p. 363.
Calamocichla schillingsi, n. sp., Pangani district; REICHENOW, Ornith. Monber. xii, p. 95.

Family SYLVIIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 691-736.
Locustella luscinioides, breeding in the Rhine Provinces; GEYR VON SCHWEPPENBURG, Ornith. Monber. xii, pp. 145-147.
Calamoherde dumetorum and *C. arundinacea*, nesting habits; RASPAIL, Bull. Soc. zool. France xxix, pp. 63-70, text-figg. 1-5.
Aerocephalus palustris, in Oxfordshire; FOWLER, Zoologist 1904, pp. 346 & 347. *A. aquaticus* in Norfolk. Cf. Nature, vol. lxx, p. 631.
Tatare vaughani, described and figured; NICOLL, Ibis 1904, pp. 55 & 56, pl. i.
Lusciniola ædon, eggs figured; DRESSER, t. c. pl. x, figg. 1 & 2.
Arundinax ædon, in Western Minusinsk; SUSHKIN, Bull. B. O. C. xiv, p. 46.
Cisticola katoneæ, n. sp., Boma-Gombe, German E. Africa; MADARASZ, Ann. Mus. Hungar. ii, p. 204 : *C. pictipennis*, n. sp., Moschi; id. t. c. p. 205.
C. cinnamomea, n. sp., Uhehe, German E. Africa; REICHENOW, Ornith. Monber. xi, p. 28 : *C. sylvia*, n. sp., Lake district, Equatorial Africa; id. t. c. p. 28 : *C. humilis*, n. sp., Lettema Mts., E. Africa; MADARASZ, t. c. p. 168 : *C. erythrogenys djamdjamensis*, n. subsp., Djam-djam Mts. N. E. Africa; NEUMANN, t. c. pp. 163 : *C. blanfordi sobatensis*, n. subsp., Sobat River; id. t. c. p. 164 : *C. cisticola fuscicapilla*, distinct from *C. cisticola*; HARTERT, Nov. Zool. xi, p. 209.
Prinia gracilis deltae, n. subsp., Nile Delta; REICHENOW, J. Ornith. 1904, p. 307.
Spiloptila reichenowi, n. sp., Lettema Mts., German East Africa; MADARASZ, Ornith. Monber. xii, p. 179.
Bradypterus castaneus, figured; REICHENOW, Vög. Afrikas iii.
Hypolais olivetorum, breeding in Dalmatia; KOLLIBAY, J. Ornith. 1904, pp. 107-112.
Sylvia semenowi, n. sp., Persia; SARUDNY, Ornith. Jahrb. xv, pp. 220 & 221 : *S. curruca halimodendri*, n. subsp., Middle Kirghis Steppes [Lower Irghis and Turgai Rivers, 52°-65° E. long.]; *S. curruca* and *S. affinis*, notes on; SUSHKIN, Bull. B. O. C. xiv, pp. 42 & 43 : *S. curruca*, early nesting in Surrey; BUNYARD, Zoologist 1904, p. 227 : CUMMINGS, t. c. p. 264 : *S. orphea jerdoni*, in Dalmatia; KOLLIBAY, J. Ornith. 1904, pp. 115-117.
Herbivocula schwarzi, in Western Minusinsk; SUSHKIN, Bull. B. O. C. xiv, p. 46 : *H. fuscata*, in Yenesei; id. t. c. p. 46.
Phylloscopus humei, in the Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 46 : *P. viridanus*, on the northern slope of the Sayan Mts., *P. plumbeitarsus*, on the southern slope and in Mongolia; SUSHKIN, t. c. p. 46 : *P. tristis axillaris*, n. subsp., C. Yenesei (55° N. lat.); id. t. c. p. 44 : *P. rufus fortunatus*, on Lanzarote Island; HARTERT, t. c. p. 51 : *P. viridanus*, in the Baltic Provinces; OTTO, Ornith. Monber. xii, pp. 73-78 : *P. fortunatus*, its note; NICOLL, Ibis 1904, p. 556.
Acanthopneuste borealis (Blasius) is the proper name for the North American Willow Warbler; OBERHOLSER, Auk xxi, p. 390.
Regulus belongs to the *Sylviidæ*; cf. RIDGWAY, Birds, North and Middle America iii, pp. 698-710.

- Acanthiza ewingi* Gould, *A. diemensis*, and *A. mastersi*, synonymy ; SCLATER, Bull. B. O. C. xv, p. 9 : *A. ewingi* and *A. robustirostris*, eggs described ; CAMPBELL, Emu iii, p. 237 : in Tasmania ; LEGGE, t. c. pp. 179 & 180.
- Apalis ruwenzorii*, **n. sp.**, Ruwenzori ; JACKSON, Bull. B. O. C. xv, p. 11 : *A. murina*, **n. sp.**, Roruma District, E. Africa ; REICHENOW, Ornith. Monber. xii, p. 28.
- Euprinodes leucogaster*, **n. sp.**, Fernando Po ; SHARPE, Bull. B. O. C. xiv, p. 94.
- Eremomela damarensis*, **n. sp.**, Damara Land ; SHARPE, Ibis 1904, p. 339 : *E. polioxantha*, from Mashona Land and Nyasa Land ; id. t. c. p. 340.
- Parnottila ansorgei*, **n. sp.**, N. Angola ; HARTERT, Bull. B. O. C. xiv, pp. 72 & 73.
- Pholidornis bedfordi*, **n. sp.**, Fernando Po ; GRANT, t. c. p. 56.
- Cettia cetti*, in Sussex ; NICOLL, Bull. B. O. C. xiv, p. 84.
- Malurus superbus* (Shaw) = *M. cyaneus* (Ellis), *M. australis*, nom. novum pro *M. superbus*, auct. (nee Shaw) ; NORTH, Ibis 1904, p. 672 : *M. assimilis* North, notes on ; SCLATER, Bull. B. O. C. xiv, p. 9 : HARTERT, t. c. p. 10 : *M. leucopterus* and *M. leuconotus*, notes on ; MILLIGAN, Emu iv, p. 52.
- Amytornis*, notes on the species ; KEARTLAND, Victorian Natural. xx, pp. 133-139.

Family VIREONIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 128-232.
- Vireosylva gilva brewsteri*, **n. subsp.**, N. W. Mexico ; RIDGWAY, Birds, North and Middle America iii, p. 158 : *V. josephæ costaricensis*, **n. subsp.**, Highlands of Costa Rica ; id. t. c. pp. 159 & 160.
- Vireo huttoni mexicanus*, **n. subsp.**, Southern Mexico and Guatemala ; RIDGWAY, t. c. pp. 186 & 197 : *V. huttoni cognatus*, **n. subsp.**, Lower California ; id. t. c. p. 199 : *V. bellii arizonæ*, **n. subsp.**, Arizona, N. W. Mexico and Western Texas ; id. t. c. pp. 207 & 208 : *V. lauræ*, **n. sp.**, Grenada, W. I. ; NICOLL, Bull. B. O. C. xiv, p. 95, figured ; id. Ibis 1904, pl. xi, fig. 2 : *V. caymanensis*, note on ; id. Bull. B. O. C. xiv, p. 94 : *V. philadelphicus*, note on the nesting ; CLAIRE, Auk xxi, p. 282 : YOUNG, t. c. p. 283.
- Pachysylva ochraceiceps pallidipectus*, **n. subsp.**, Southern Honduras and Costa Rica ; RIDGWAY, Birds, North and Middle America iii, pp. 219 & 220.
- Vireolanus pulchellus viridiceps*, **n. subsp.**, Panama ; RIDGWAY, t. c. p. 224.

Family AMPELIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 103-112.
- Ampelis garrulus*, note on ; EVANS, Ann. Scott. Nat. Hist. 1904, p. 54 : late stay in Inverness-shire ; MARSHALL, t. c. p. 188 : in Lincolnshire ; BLATHWAYT, Zoologist 1904, pp. 74 & 75 : in East Anglia ; TUCK, t. c. p. 115 : in North of Ireland ; PATTERSON, t. c. p. 31 : in Germany ; LINDNER, Ornith. Monber. xii, p. 96 : in Brunswick ; R. BLASIUS, t. c. p. 8 : near Montbéliard ; BERNARD, Ornith. xii, No. 4, pp. 565-567 : in S. E. France ; FRAISSE, t. c. p. 569 : in Piedmont ; SALVADORI, Avicula viii, p. 28 : notes on ; MARTORELLI, t. c. pp. 42-47 cum fig.

Family DULIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 125-127.

Family PTILOGONATIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 113-125.

Family PRIONOPIDÆ.

Pitohui dichrous monticola, n. subsp., British New Guinea; HARTERT, Bull. B. O. C. xiv, p. 79.

Family LANIIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 232-252.

Gymnorhina longirostris and *G. dorsalis*, remarks on; DEGEN, Emu iii, pp. 201-207: *G. dorsalis*, notes on; MILLIGAN, Emu iii, pp. 177-179, pl. x.

Lanius excubitor, in the Forth; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1904, p. 244: in Lancashire; GRAVES, Zoologist 1904, p. 115: in Cheshire; GRAVES, t. c. p. 31: *L. ludovicianus mearnsi*, n. subsp., Lower California; RIDGWAY, Birds, North and Middle America iii, p. 252: *L. vittatus*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 7 & 8: *L. collurio*, breeding in captivity; GÜNTHER, Avicult. Mag. (2) ii, pp. 339-346.

Laniarius ambiguus, n. sp., Kiboscho, German E. Africa; MADARASZ, Ann. Mus. Hungar. ii, p. 205.

Chlorophoneus miniatus, n. sp., Kiboscho, German E. Africa; id. t. c. ii, p. 205.

Pachycephala par, n. sp., S. W. Islands, Moluccas (Roma Is.); HARTERT, Nov. Zool. xi, p. 211: *P. par compar*, n. subsp., S. W. Islands (Letti, Moa); id. t. c. p. 212: *P. howensis*, n. sp., Lord Howe Is.; NORTH, Rec. Austral. Mus. v, pp. 125 & 126: = *P. contempta*; HARTERT, Bull. B. O. C. xv, p. 10: *P. gutturalis* and *P. occidentalis*, notes on; NORTH, t. c. p. 9; HARTERT, t. c. p. 10: *P. occidentalis* and allies, notes on; MILLIGAN, Emu iv, pp. 48-50.

Hyloterpe fallax, n. sp., Calayan Is., Babuyan, Philippine Archipelago; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 27, pl. v, fig. 2, *H. albiventris* (pl. v, fig. 1), and *H. philippinensis* (pl. v, fig. 2), figured; id. t. c. pl. v.

Eulacestoma nigropectus, figured; SCLATER, Ibis 1904, pp. 373-375, pl. ix.

Eopsaltria nana, Ramsay, notes on; SCLATER, Bull. B. O. C. xiv, p. 9:

HARTERT, t. c. p. 10.

Family PARIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 375-436.

Pæcile cincta sayana, n. subsp., W. Sayan Mts. Altai; SUSHKIN, Bull. B. O. C. xiv, p. 44.

Parus major, in Caithness; SOUTHERLAND, Ann. Scott. Nat. Hist. 1904, p. 188.

Parus cyaneus, *P. cæruleus* and allied species, notes on; GROTE, Ornith. Monber. xii, pp. 175-177: *P. cæruleus languidus*, nom. emend. pro *P. c. pallidus* Grote (nec Brehm); GROTE, J. Ornith. 1904, p. 307: *P. montanus kleinschmidti*, egg; HARTERT, Bull. B. O. C. xiv, p. 79: *P. atricapillus turneri*, note on; OSGOOD, North Amer. Fauna, No. 24, p. 80: *P. rufescens*, notes on the distribution; GRINNELL, Auk xxi, pp. 364-382, maps i-iii.

Bæolophus atricristatus sennetti, n. subsp., Texas; RIDGWAY, Birds, North and Middle Amer. iii, pp. 386 & 387: *B. inornatus restrictus*, n. subsp.,

- Oakland, California; id. t. c. p. 389: *B. inornatus murinus*, n. subsp., Southern California; id. t. c. pp. 389 & 390.
- Pentheres afer* (Gm.) distinct from *P. cinerascens* (V.), *P. intermedius* (Shelley) = *P. cinerascens*; SHARPE, Ibis 1904, p. 343.
- Cyanistes transchanicus* in Chitral; FULTON, J. Bombay Soc. xvi, p. 47.
- Ægithaliscus sharpei*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 84.
- Psaltiriparus minimus saturatus*, n. subsp., Puget Sound; RIDGWAY, Birds, N. & M. Amer. iii, pp. 434 & 435.
- Acredula tephronota passekii*, n. subsp., S. W. Persia; SARUDNY, Ornith. Monber. xii, p. 164.
- Acredula rosea* in the Outer Hebrides; MACKENZIE, Ann. Scott. Nat. Hist. 1904, p. 188.
- Remiza yenisensis*, n. sp., Upper Yenesei River, near Sayan; SUSHKIN, Bull. B. O. C. xiv, pp. 44 & 45: *R. pendulina centralasiae*, n. subsp. [*R. stoliczkae* Pleske, nec Hume], Central Asia; id. t. c. p. 45: *R. p. jaxartensis*, n. subsp., Turkestan; id. t. c. p. 45.
- Anthoscopus sylviella*, n. sp., Usegua; REICHENOW, Ornith. Monber. xii, p. 27: *A. minutus* (fig. 1) and *A. smithi* (fig. 2), figured; SHARPE, Ibis 1904, pl. viii.
- Aphelocephala nigricincta* North, notes on; NORTH, Bull. B. O. C. xv, p. 9; HARTERT, t. c. p. 10.

Family CHAMÆIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 683-691.

Family REGULIDÆ.

Regulus belongs to the *Sylviidæ*.

Cf. RIDGWAY, Birds, North and Middle Amer. iii, pp. 698-710.

Regulus cristatus coatsi, n. subsp., Subalpine zone of Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 44.

Regulus satrapa olivaceus nesting in Western Washington; BOWLES, Condor vi, pp. 163-165: *R. calendula* in Lat. 53° 24' N., Long. 30° 15' W.; PATERSON, Ann. Scott. Nat. Hist. 1904, p. 55: nesting habits; SILOWAY, Condor vi, p. 14: *R. c. cineraceus*, n. subsp., Los Angeles County, California; GRINNELL, t. c. p. 25.

Family SITTIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 436-459.

Sitta tschitscherini, n. sp., Ispahan, Persia; SARUDNY, Ornith. Jahrb. xv, pp. 218 & 219: *S. victoriae*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 84: *S. bifasciata*, n. sp., Krasnoyarsk, C. Siberia; MADARASZ, Ornith. Monber. xii, pp. 183 & 184: *S. caesia*, unusual nesting place; JOURDAIN, Zoologist 1904, p. 384.

Family CERTHIIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 459-473.

Certhia brachydactyla dorothea, n. subsp., Cyprus; HARTERT, Bull. B. O. C. xiv, pp. 50 & 51: remarks on the genus *Certhia*; id. t. c. p. 51.

Climacteris scandens in Tasmania; LEGGE, Emu iii, p. 181: *C. weiskei* and allied species, notes on; SCLATER, Bull. B. O. C. xv, pp. 9 & 10: HARTERT, t. c. p. 10.

Family ZOSTEROPIDÆ.

Zosterops omoensis, **n. sp.**, Omo River, N. E. Africa; NEUMANN, Ornith. Monber. xii, p. 162: *Z. luteirostris*, **n. sp.**, Gizo Isl., Solomon Islands; HARTERT, Bull. B. O. C. xiv, p. 61: *Z. toroensis*, **n. sp.**, Toro; REICHENOW, J. Ornith. 1904, p. 133: *Z. niassæ*, **n. sp.**, N. Nyasa Land; id. t. c. p. 133: *Z. flavissima* (nec Hartert), **n. sp.**, Cagayancillo Isl., Paragua Province, Philippine Archipelago; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 26 [*Z. richmondi* nom. emend.; MCGREGOR, P. Soc. Washington xvii, p. 165]: *Z. senegalensis* and its allies; NEUMANN, Ornith. Monber. xii, pp. 109-114: *Z. toroensis* Reichenow = *Z. stuhlmanni* Reichenow, juv.; id. t. c. p. 112: *Z. jubaensis* Erlanger, probably = *Z. smithi* Neum.; id. t. c. p. 113: *Z. anderssoni* Shelley, from Mashona Land? = *Z. stierlingi* Reichenow, from Uhehe; id. t. c. p. 113: *Z. virens* and its allies; id. t. c. pp. 115-118: *Z. kikuyuensis*, **n. sp.**, Kikuyu to Kenia; id. t. c. p. 117: *Z. kaffensis*, **n. sp.**, Kaffa; id. t. c. p. 117: *Z. schoana*, **n. sp.**, Shoa to Upper Blue Nile (Abai); id. t. c. p. 117: *Z. consobrinorum*, **n. sp.**, Laloumera, South-east Celebes; MEYER, Notes Leyden Mus. xxiv, pp. 232-235: *Z. lettiensis* and its allies; HARTERT, Nov. Zool. xi, p. 213: *Z. bassetti* from Roma Isl., Moluccas; id. t. c. p. 214.

Family DICÆIDÆ.

Dicæum nigrilore, **n. sp.**, Mt. Apo, S. Mindanao; HARTERT, Bull. B. O. C. xiv, p. 8: *D. apo*, Mindanao, *D. bongæ*, Samar, **n. spp.**; HARTERT, Bull. B. O. C. xiv, pp. 79 & 80.
Eafa allied to *Rhamphocaris*; SALVADORI, Ibis 1904, p. 473.

Family NECTARINIIDÆ.

Æthopyga victoriae, **n. sp.**, Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 83.
Cinnyris mariquensis ovamboensis, **n. subsp.**, Ovampo Land; REICHENOW, J. Ornith. 1904, p. 133: *C. solaris exquisita*, **n. subsp.**, Wetter Isl., Moluccas; HARTERT, Nov. Zool. xi, p. 214: *C. s. degener*, **n. subsp.**, Flores, Lomblen, Alor Isl.; id. t. c. p. 214: *C. habessinica hellmayri*, **n. subsp.**, Hadramaut, S. Arabia; NEUMANN, Ornith. Monber. xii, p. 29.
Cyanomitra alinae, **n. sp.**, Ruwenzori Mts.; JACKSON, Bull. B. O. C. xiv, p. 94.

Family MELIPHAGIDÆ.

Melithreptus carpentariana, **n. sp.**, North Queensland; CAMPBELL, Emu iv, pp. 70 & 71: *M. leucogenys* Milligan, notes on; SCLATER, Bull. B. O. C. xv, p. 9: ? = *M. brevirostris*; HARTERT, t. c. p. 10: *M. brevirostris*, figured; CAMPBELL, Emu iii, pl. xvi, fig. 2.
Ptilotis novæ-norciæ, **n. sp.**, Wongan Hills, Western Australia; MILLIGAN, Emu iii, p. 226: *P. carteri*, figured; CAMPBELL, Emu iii, pl. xvi, fig. 1: *P. leilavalensis* vel *P. carteri*, notes on; MILLIGAN, Emu iv, pp. 51 & 52.
Acanthochaera mellivora and *A. lunulata*, notes on; id. t. c. p. 51.
Philemon cineraceus (Bp.), notes on; HARTERT, Nov. Zool. xi, p. 216.
Eafa belongs to the *Dicæidæ*; SALVADORI, Ibis 1904, p. 473.

Family MNIOTILTIDÆ.

- Helminthophila lawrencei* breeding in New York City; BEEBE, Auk xxi, pp. 387 & 388: *H. virginie*, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 50-52: *H. celata lutescens*, notes on; FINLEY, Condor vi, pp. 131-133.
- Dendroica crawfordi*, n. sp., Little Cayman Isl., W. I.; NICOLL, Bull. B. O. C. xiv, p. 95, fig.: id. Ibis 1904, pl. xi, fig. 1: *D. dominica* in Montserrat, W. I.; NICOLL, Ibis 1904, p. 571.
- Dendroica kirtlandi*, migration route; ADAMS, Bull. Michigan Ornith. Club v, pp. 14-21; breeding area; WOOD, t. c. pp. 3-13: breeding in Northern Michigan; ARNOLD, Auk xxi, pp. 487 & 488: in Georgia; HELME, t. c. p. 291: *D. townsendi*, nesting habits; SILLOWAY, Condor vi, pp. 12 & 13: *D. virens* in Kansas; SNOW, Auk xxi, p. 86: *D. tigrina* feeding on grapes; MCATEE, t. c. pp. 489-491: *D. subita*, n. sp., Barbuda; RILEY, Smithson. Collect. xlvii, pp. 289 & 290: *D. nigrescens*, notes on; FINLEY, Condor vi, pp. 31-35 cum tab.: *D. auduboni nigrifrons*, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 54 & 55.
- Seiurus noveboracensis notabilis*, note on; MCATEE, Auk xxi, pp. 488 & 489.
- Geothlypis trichas arizela*, notes on; FINLEY, Condor vi, pp. 31-35 cum figg.: unusual nesting sites; JOHNSON, t. c. pp. 129-131.
- Setophaga picta*, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 57 & 58.

Family MOTACILLIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 1-23.
- Motacilla lugubris*, nesting habits; JOURDAIN, Zoologist 1904, pp. 421 & 422, 456 & 457: *M. alba* in Ireland; WARREN, Irish Natural. xiii, p. 155: on Bartragh; WARREN, Zoologist 1904, pp. 227 & 228: *M. madaraspatensis*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 3 & 4: *M. borealis* in Sussex; NICOLL, Bull. B. O. C. xiv, p. 84.
- Budytes flavus alascensis*, n. subsp., Alaska; RIDGWAY, Birds, N. & M. Amer. iii, pp. 8-10.
- Anthus maculatus* and *A. trivialis*, nomenclature; BLANFORD, Ibis 1904, pp. 662 & 663: *A. campestris*, occurrences in England; NICOLL, Zoologist 1904, pp. 452-454: apparently a regular autumn migrant to the coast of Sussex; id. Bull. B. O. C. xv, p. 12: *A. calthorpe* Shelley = *A. caffer*; REICHENOW, Vög. Africas iii, p. 312: *A. cameroonensis* Shelley = *A. cinnamomeus*; id. t. c. p. 313: *A. vaalensis* Shelley = *A. leucophrys*; id. t. c. p. 316: *A. richardi* in Cornwall; HOWARD, Zoologist 1904, p. 115: *A. pratensis*, blue eggs; RADCLIFFE SAUNDERS, Bull. B. O. C. xiv, p. 42: *A. pensilvanicus*, note on; BAILEY, Auk xxi, p. 361: *A. spragueii* in Georgia; HELME, t. c. p. 291.
- Macronyx sharpei*, n. sp., Mau Downs, Equatorial Africa; JACKSON, Bull. B. O. C. xiv, p. 74.
- Charadriola*, n. g., type *C. singularis*, n. sp., Lake Jippe, Equatorial Africa; MADARASZ, Ann. Mus. Hungar. ii, pp. 396-398 cum fig. = *Tmetothylacus tenellus* Cab.; JACKSON, Ibis 1905, p. 104.

Family ALAUDIDÆ.

- Alaemon subcoronata* distinct from *A. semitorquata*; SHARPE, Ibis 1904, pp. 359-361: *A. bradshawi*, n. sp., Orange River; id. t. c. p. 361:

- A. damarensis*, **n. sp.**, Damara-land; id. t. c. p. 361: *A. benguelensis*, **n. sp.**, Benguela; id. t. c. p. 361.
- Otocoris*, key to Palearctic species; BIANCHI, Ibis 1904, pp. 370-372: *O. brandti montana*, Mts. of N. Central Asia, *O. b. przewalskii*, Zaidam, n. subsp.; id. t. c. p. 371: *O. elwesi khamensis*, n. subsp., Kham, S. E. Tibet; id. t. c. p. 372: *O. alpestris praticola*, breeding at Ipswich, Mass.; TOWNSEND, Auk xxi, p. 81.
- Melanocorypha calandra psammochroa*, n. subsp., Transcaspiæ; HARTERT, Vög. Pal. Faun. ii, p. 210: *M. c. raddei*, n. subsp., S. W. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 221 & 222.
- Calendula dunni*, **n. sp.**, Ogadeh, Sudan; SHELLEY, Bull. B. O. C. xiv, pp. 82 & 83.
- Devetia*, nomen emend pro *Botha* Shelley (nec Rafinesque); BUTURLIN, Auk xxi, p. 80.
- Alauda intercedens*, **n. sp.**, Greece; EHMEKE, Ann. Mus. Hungar. ii, p. 296: *A. balcanica*, **n. sp.**, Balkans; id. t. c. p. 297: *A. minuta*, **n. sp.**, Caucasus to Balkans and Greece; id. t. c. p. 298: *A. schach*, **n. sp.**, E. Persia; id. t. c. p. 299: *A. beludshistana*, **n. sp.**, Persian Beloochistan; id. t. c. p. 299: *A. cypriaca* and *A. insularis*, **n. spp.**, Cyprus; id. t. c. p. 300: *A. sordida*, **n. sp.**, Hungary; id. t. c. p. 300: *A. subtilis*, **n. sp.**, Montenegro; id. t. c. p. 301: *A. transcaspica*, **n. sp.**, Transcaspiæ; id. t. c. p. 301: *A. albigularis* Brehm in Hungary; id. t. c. p. 301: *A. cinerascens*, vice *Alauda cinerea* (nec Vieill.); EHMEKE, J. Ornith. 1904, p. 313: in Tunis, REICHENOW, t. c. p. 312: MATSCHIE, t. c. p. 314: *A. japonica inopinata*, n. subsp., ? locality; BIANCHI, Annuaire Mus. St. Petersb. ix, pp. xxiv, xxx & xxxi.
- Calandrella brachydactyla*, in the Flannan Islands; CLARKE, Bull. B. O. C. xv, p. 11: SAUNDERS, l. c.: CLARKE, Ann. Scott. Nat. Hist. 1904, p. 206: *C. minor polatzeki*, n. subsp., Lanzarote, Canary Is.; HARTERT, Vög. Pal. Faun. ii, p. 217: *C. minor seistanica*, n. subsp., S. W. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 22-24: *C. minor minuta*, n. subsp., Persia; id. t. c. p. 224.
- Mirafra marginata* Hawker = *M. cantillans*; REICHENOW, Vög. Afrikas iii, p. 335: *M. zombæ* Grant and *M. degeni* Grant = *M. fischeri*; id. t. c. p. 339: *M. transvaalensis* and *M. tropicalis* Hartert = *M. africana*; id. t. c. p. 343: *M. pallida* and *M. grisescens* Sharpe = *M. africana*; id. t. c. p. 343: *M. degeni*, figured; GRANT, Ibis 1904, pl. v: *M. horsfieldi pallidus*, n. subsp., Roebuck Bay Plains, N. W. Australia; HALL, Emu iii, pp. 231 & 232.
- Galerida schlüteri*, **n. sp.**, Algeria; KLEINSCHMIDT, Ornith. Monber. xii, pp. 196 & 197: *G. cristata caroli*, n. subsp., Natron Valley, Lower Egypt; HARTERT, Vög. Pal. Faun. ii, p. 234: *G. c. tardinata*, n. subsp., South Arabia; id. t. c. p. 235: *G. theklæ erlangeri*, n. subsp., North Morocco; id. t. c. p. 237.
- Ammomanes deserti orientalis*, n. subsp., N. E. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 224 & 225: *A. lusitana erythrochroa*, n. subsp., Dongola; REICHENOW, J. Ornith. 1904, p. 307: *A. samharensis* Shelley = *A. saturata*; REICHENOW, Vög. Afrikas iii, p. 356: *A. assabensis*, distinct from *A. samharensis*; SALVADORI, Ibis 1904, p. 473 (cf. GRANT, t. c. p. 262): *A. phœnicuroides* and *A. zarudnii*, notes on; HARTERT, Ibis 1904, p. 543.
- Pyrrhuloxia madagascariensis* Reichenow = *P. leucotis*; id. Vög. Afrikas iii, p. 365: ? *P. butleri* Shelley = *P. frontalis*; id. t. c. p. 370.

Family FRINGILLIDÆ.

- Ligurinus chloris*, "xanthochroism"; BLATHWAYT, Zoologist 1904, p. 32.
- Coccothraustes coccothraustes*, breeding in Fifeshire; BERRY, Ann. Scott. Nat. Hist. 1904, pp. 11-14: in East Lothian; TUNNARD, t. c. p. 126: in Shetland; SAXBY, t. c. p. 157: at Skerryvore Lighthouse; TOMISON, t. c. pp. 187 & 188: *C. vulgaris*, at Peterhead; SEARLE, Ann. Scott. Nat. Hist. 1904, p. 244: in Aberdeenshire; SIM, Zoologist 1904, p. 384.
- Zamelodia melanocephala*, nesting habits; HEAD, Condor vi, pp. 35-37: notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 44 & 45: nesting habits; FINLEY, Condor vi, pp. 145-148: *Z. ludoviciana*, its song; SCOTT, Science (n. s.) xix, pp. 957-959.
- Hesperiphona vespertina*, in the vicinity of Quebec; DIONNE, Auk xxi, p. 280: at Beverley, Mass.; BROWN, Auk xxi, p. 385: in Central New York; FUERTES, t. c. p. 385.
- Amaurospiza axillaris* Sharpe = *A. mæsta* (Hartl.); HELLMAYR, Verh. Ges. Wien liv, pp. 516-518.
- Sporophila bouvreuil* vice *S. nigroaurantia*; HELLMAYR, Verh. Ges. Wien liv, p. 519: *S. saturata*, n. sp., Sao Paulo; id. t. c. p. 520: *S. cinna-momea* (Lafr.), notes on; id. t. c. p. 521: *S. lorenzi*, n. sp., ? Cayenne; id. t. c. pp. 522 & 523: *S. ruficollis* and *S. melanogastra*, notes on; id. t. c. pp. 523-526: *S. melanocephala ochracea*, n. subsp., Rio Parana; id. t. c. p. 534: a key to the species of *Sporophila*; id. t. c. pp. 526-528, and further notes on the latter.
- Fringilla palmarum*, on Hierro Island; HARTERT, Bull. B. O. C. xiv, p. 51: *F. maderensis*, its note; NICOLL, Ibis 1904, pp. 555 & 556: *F. montifringilla*, in the Philippine Islands (Calayan) in winter; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 24.
- Carduelis elegans*, figured; BONHOTE, Avicult. Mag. (2) iii, pl. to p. 21, fig. 1: *C. caniceps*, figured; FINN, t. c. fig. 2.
- Montifringilla margaritacea*, n. sp., Altai Mts.; MADARASZ, Ornith. Monber. xii, p. 196: *M. alpicola groum-grzimaili*, n. subsp., Bei-schan, Central Asia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 215 & 216: *M. alpicola gaddi*, n. subsp., Province of Luristan, Persia; iid. t. c. p. 216: *M. brandti walteri*, n. subsp., Szetschwan and Kansu; HARTERT, Vög. Pal. Faun. ii, p. 138.
- Rhodopechys sanguinea*, in Chitral; FULTON, J. Bombay Soc. xvi, p. 53.
- Erythropsia sanguinea*, eggs figured; DRESSER, Ibis 1904, pl. iii, fig. 5.
- Bucanetes obsoletus*, eggs figured; DRESSER, Ibis 1904, pl. iii, figg. 4 & 6.
- Acanthis linaria islandica*, n. subsp., Iceland; HANTZSCH, Ornith. Monber. xii, pp. 32-34: *A. rufescens*, breeding in Norfolk in brown plumage; MONTAGU, Bull. B. O. C. xiv, p. 91: *A. brevirostris*, nest and eggs described; FULTON, J. Bombay Soc. xvi, pp. 53 & 54: *A. hornemanni exilipes*, note on; OSGOOD, North Amer. Fauna, No. 24, pp. 72 & 73: *A. flavirostris*, nesting in North Devon; C. PEARSON, Bull. B. O. C. xiv, p. 91.
- Linota hornemanni* from Siberia; REICHENOW, J. Ornith. 1904, p. 570: *L. rufescens*, in Sicily; WHITAKER, Ibis 1904, p. 478: *L. pygmaea* = *Serinus pusillus* juv.; HARTERT, Nov. Zool. xi, p. 459.
- Petronia petronia brevirostris* Dyb., its range; SUSHKIN, Bull. B. O. C. xiv, p. 43.
- Gymnoris flavicollis transfuga*, n. subsp., Bagu Kelat, Baluchistan; HARTERT, Vög. Pal. Faun. ii, p. 145, figg. 30 & 31.
- Passer*, notes on the genus; HARTERT, Nov. Zool. xi, pp. 457-459: *P. tingitanus* Loche is the name for N. W. African form; id. t. c. p. 457: *P. pyrrhoptera* Less., notes on; id. t. c. p. 457: *P. rufipectus* Bp. is a N. E. African race of *P. hispaniolensis*; id. t. c. p. 458: *P. pallasi* Bp.

- is the Siberian form of *P. hispaniolensis*; id. t. c. p. 458: *P. ploceisoma* Bp. = *Philæterus socius*; id. t. c. p. 458: *P. rüppelli* Bp. = *Ploceipasser superciliosus*; id. t. c. p. 458: *P. confucius* = *P. jagoensis*; id. t. c. p. 458: *P. rufidorsalis* = *P. arboreus*; id. t. c. p. 458: *P. diffusus* and its allies; id. t. c. pp. 458 & 459: *P. motitensis* and its allies; id. t. c. p. 459: *P. domestica biblicus*, n. subsp., Palestine; id. Vög. Pal. Faun. ii, p. 149: *P. italiae senckenbergianus*, n. subsp., N. E. Africa; id. t. c. p. 152: *P. montana taiwanensis*, n. subsp., Formosa; id. t. c. p. 161: *P. rutilans debilis*, n. subsp., Cashmere; id. t. c. p. 162: *P. flückigeri*, n. sp., Algeria; KLEINSCHMIDT, Ornith. Monber. xii, pp. 7, 197 & 198: *P. akasver*, n. sp., Marrakesch, S. Morocco; id. t. c. p. 7.
- P. hispaniolensis washingtoni* Tschusi is inseparable from *P. hispaniolensis*; REICHENOW, Vög. Afrikas iii, p. 237: *P. mesopotamicus*, n. sp., Mochammera, Persia; ZARUDNY, Ornith. Jahrb. xv, p. 108: *P. simplex*, *P. saharae*, and *P. zarudnyi*, notes on; HARTERT, Nov. Zool. xi, p. 460: *P. cinnamomeus*, imitating the song of *Purus atriceps*; FULTON, J. Bombay Soc. xvi, p. 54: *P. luteus*, breeding in captivity; WILLIAMS, Avicult. Mag. (2) iii, pp. 75-77.
- Alario leucolaema* Sharpe = *Alario alario*; REICHENOW, Vög. Afrikas iii, p. 246.
- Serinus hortulanus*, at Dover, Nov. 16; SETH-SMITH, Zoologist 1904, p. 457: *S. shelleyi* Neumann = *S. sharpei*; REICHENOW, Vög. Afrikas iii, p. 266.
- Crithagra estheræ*, figured; FINSCH, J. Ornith. 1904, pp. 122 & 123, taf. A. *Anomalospiza rendalli* Shelley = *A. imberbis* (Cab.); REICHENOW, Vög. Afrikas iii, p. 276.
- Loxia*, notes on the genus; HARTERT, Nov. Zool. xi, p. 460.
- Loxia curvirostra hispana*, n. subsp., Spain; HARTERT, Vög. Pal. Faun. ii, p. 119, fig. 27: *L. c. anglica*, n. subsp., England; id. t. c. pp. 119 & 120: *L. c. scotica*, n. subsp., Scotland; id. t. c. p. 120, fig. 24: *L. leucoptera*, in Kansas; SNOW, Auk xxi, p. 284.
- Pyrrhula erythrina*, in Radnorshire; SALTER, Zoologist 1904, p. 228.
- Pinicola enucleator canadensis*, on Long Island, New York; HELME, Auk xxi, pp. 280 & 281: DUTCHER, t. c. p. 281.
- Carpodacus thura* and its subspecies, *C. blythi* distinct from *C. dubius*; HARTERT, Nov. Zool. xi, p. 456.
- Carpodacus severzovi*, eggs figured; DRESSER, Ibis 1904, pl. iii, figg. 1 & 3: *C. synoica* [-us] (Temm.), the older name for *C. sinaiticus*; HARTERT, Nov. Zool. xi, p. 457.
- Hæmatospiza indica* (Gm.) the name for *H. sipahi*, auct.; HARTERT, Nov. Zool. xi, p. 456.
- Plectrophanes nivalis*, in Mid-Atlantic; BUTLER, Ibis 1904, pp. 304 & 305.
- Calcarius lapponicus*, in the Flannan Is., Outer Hebrides; CLARKE, Ann. Scott. Nat. Hist. 1904, pp. 206 & 207: in Norfolk; APLIN, Zoologist 1904, pp. 428 & 429: at Warwick; GROUND, t. c. p. 428: in Sussex; NICOLL, Bull. B. O. C. xv, p. 12.
- Emberiza cia*, its distribution in the Rhine Provinces; LE ROI, Ornith. Monber. xii, pp. 153-158.
- Emberiza cia par*, n. subsp., Gudan, Transcaspia; HARTERT, Vög. Pal. Faun. ii, p. 184: *E. schoeniclus pallidior*, n. subsp., Aiderli, Turkestan; id. t. c. p. 197: *E. s. othmari*, n. subsp., Bulgaria; id. t. c. p. 198: *E. pyrrhuloides reiseri*, n. subsp., Lamia, Thessaly; id. t. c. p. 199: *E. p. centralasie*, n. subsp., Maralbashi, Eastern Turkestan; id. t. c. p. 199.
- Emberiza pusilla*, in Orkney; CLARKE, Ann. Scott. Nat. Hist. 1904, pp. 14-16: near Rugby in October, 1902; CARROLL, Zoologist 1904, pp. 312 & 313: APLIN, Ibis 1904, pp. 306 & 307.

- Emberiza cirius*, time of song ; ANGUS, Zoologist 1904, p. 142 : in Worcestershire and Shropshire ; STEELE-ELLIOTT, Zoologist 1904, p. 457.
- Emberiza (Hypocentor) semenowi*, n. sp., Arabistan ; SARUDNY, Ornith. Jahrb. xv, pp. 217 & 218.
- Emberiza kosslowi*, n. sp., Upper Mekong Valley ; BIANCHI, Bull. B. O. C. xiv, p. 80.
- Emberiza luteola* (figg. 7, 8, & 9), *E. spodocephala* (figg. 10 & 12), *E. cinerea* (fig. 11), *E. stewarti* (fig. 14), *E. stracheyi* (figg. 13 & 15), eggs figured ; DRESSER, Ibis 1904, pl. iii.
- Emberiza spodocephala*, in the Kusnetz Alatau ; SUSHKIN, Bull. B. O. C. xiv, p. 46.
- Fringillaria media*, n. sp., W. Cape Colony ; SHARPE, Ibis 1904, p. 354 : *F. dthala* Grant = *F. arabica* ; REICHENOW, Vög. Afrikas iii, p. 291.
- Cyanospiza ciris*, in Leon County, Florida ; WILLIAMS, Auk xxi, pp. 458 & 459.
- Zonotrichia leucophrys*, note on ; BAILEY, Auk xxi, p. 358.
- Ammodramus nelsoni*, breeding in North Dakota ; BOWMAN, Auk xxi, pp. 385 & 386.
- Melospiza lincolni striata*, notes on ; GRINNELL, Auk xxi, pp. 274-276.
- Coturniculus henslowii*, in Munroe Co., Pa. ; BAILEY, Auk xxi, p. 486.
- Passerculus princeps*, in Georgia ; HELME, Auk xxi, p. 291.
- Passerella unalaschensis*, note on ; OSGOOD, North. Amer. Fauna, No. 24, pp. 76 & 77.
- Chondestes grammacus*, in Oneida County, N. Y. ; JOHNSON, Auk xxi, pp. 281 & 282.
- Junco caniceps*, note on the nesting ; BAILEY, Auk xxi, pp. 358 & 359.
- Junco phænotus palliatus*, notes on ; SWARTH, Cooper Ornith. Club, California 1904, pp. 41-43.
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IV. REPTILIA AND BATRACHIA.

BY

G. A. BOULENGER, F.R.S.

CONTENTS.

	Page		Page
I. TITLES	1	Emydosauria	29
II. FAUNÆ	18	Ichthyosauria	30
III. REFERENCES ARRANGED		Chelonia	30
SYSTEMATICALLY		Plesiosauria	31
Reptilia and Batrachia . .	21	Thecodontia	31
Reptilia	21	Pelycosauria	32
Squamata	22	Thalattosauria	32
Lacertilia	22	Rhynchocephalia	32
Rhaptoglossa	25	Anomodontia	32
Pythonomorpha	25	Cotylosauria	33
Dolichosauria	26	Pariosauria	33
Ophidia	26	Incertæ Sedis	33
Ornithosauria	28	Batrachia	34
Orthopoda	28	Ecaudata	34
Dinosauria	29	Caudata	38
		Apoda	40
		Stegocephalia	40
		Incertæ Sedis	40

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G. MARIKOVSKY, Termes. Kozl. Magyar Tars. 1904, pp. 524-534, gives a summary of our knowledge of Reptile and Batrachian poisons.

HOERNES, Biol. Centrbl. xxiv, pp. 566-576, reviews our knowledge of the coprolithes of extinct Reptiles and Batrachians.

REPTILIA.

H. F. OSBORN, Amer. Natural. xxxviii, pp. 93-115, figg., gives a condensed account of his classification, reported in the last Record.

Remarks on the classification of Reptiles into two Sub-classes, *Theromora* and *Herpetomorpha* : BOULENGER, P. Z. S. 1904, i, p. 480.

S. W. WILLISTON, Biol. Bull. vii, pp. 175-192, figg., writes on the temporal arches of the Reptiles and on the relationships of the principal orders.

- F. BROILI, *Anat. Anz.* xxv, pp. 577-587, figg., remarks on the early types of Reptiles.
- R. BROOM, *Tr. S. African Soc.* xv, pp. 89-96, pl. vii, remarks on the carpus and tarsus of the primitive Reptiles.
- F. BÉGUIN, *Anat. Anz.* xxiv, pp. 337-356, figg., writes on the mucous membrane of the œsophagus and its glands in Reptiles.
- A. I. STERZI, *Atti Soc. Toscano* xx, pp. 243-275, pls. ix & x, has investigated the histology of the periphery of the spinal cord in Reptiles.
- H. BARBIER, *Bull. Soc. Elbeuf* xxii, pp. 41-63, remarks on some Reptiles in the Elbeuf Museum.
- R. L. DITMARS, *Rep. New York Zool. Soc.* 1903, pp. 146-160, figg., has notes on Reptiles in captivity.

SQUAMATA.

- G. TORNIER, *SB. Ak. Berlin* 1904, pp. 1203-1214, figg., remarks on the origin and signification of the colour-patterns of Lizards and Snakes.

LACERTILIA.

- F. E. BEDDARD, *P. Z. S.* 1904, i, pp. 436-450, figg., 465-470, figg., and ii, pp. 6-22, has contributions to the anatomy of Lacertilia.
- F. E. BEDDARD, *P. Z. S.* 1904, ii, pp. 154-157, figg., and *Nature* lxx, p. 6, describes vestiges of a parasternum in *Tiliqua*.
- J. VERSLUYS, *Jun., Anat. Anz.* xxiv, pp. 641-644, writes on the muscles of mastication in the Lacertilia.
- K. PETER, *Normentafel zur Entwickel. der Zauneidech.* (Jena, 4to), describes and figures the development of *Lacerta agilis*.
- G. ALONZO, *Atti Acc. Gioen.* (4) xvi, 1903, No. 5, has made researches on the development of the limbs and tail of *Chalcides ocellatus*.
- A. N. SEWERTZOFF, *Anat. Anz.* xxv, pp. 472-494, figg., writes on the development of the limbs of *Tarentola mauritanica*.
- F. E. BEDDARD, *P. Z. S.* 1904, ii, pp. 145-147, fig., remarks on an apparently abnormal position of the foetus in the body of a *Chalcides lineatus*.
- K. PETER, *Arch. mikr. Anat.* lxiii, pp. 659-700, figg., pls. xxxi & xxxii, continues his studies on the gastrulation of *Lacerta*.
- A. NICOLAS, *Arch. Biol.* xx, pp. 611-658, pls. xvii-xix, describes the segmentation of the egg in *Anguis fragilis*.
- J. KUNITZKY, *Trudui St. Petersb. Obshch.* xxxiv (2), pp. 1-19, pl. —, has investigated the origin and development of the cuticular hair-like organs of the digits of *Tarentola mauritanica*.
- A. MORGERA, *Boll. Soc. Napoli* xvii, pp. 221-224, fig., has a preliminary note on the male genital apparatus of *Lacerta viridis* and *L. muralis*.
- F. TÖLG, *Arch. Inst. Wien* xv, pp. 119-154, pls. ix-xi, has a contribution to the knowledge of femoral and præanal pores and other similar organs in the Lacertilia.
- L. COHN, *Zool. Anz.* xxvii, pp. 185-192, figg., has investigated the structure of the femoral pores of *Cnemidophorus lemniscatus*.
- On the parietal eye of *Chalcides tridactylus* and *ocellatus*: GIANNELLI, *Monit. Zool. ital.* xv, pp. 187-197, 325-332: STADERINI, *t. c.* pp. 341-343.
- D. CASELLA, *Arch. ital. Biol.* xlii, pp. 273-288, gives a French résumé of his observations on the effects of moisture in a fasting specimen of *Chalcides ocellatus*.

GECKONIDÆ.

- Gymnodactylus russovi*, Strauch, described by ELPATIEBSKI, Amph. Rept. Aral Exped., p. 3.
- Gonatodes boonii*, **sp. n.**, VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 87, pl. vii, figg. 1 & 2, Surinam.
- Phyllodactylus europæus*, Gené. On its variation: CAMERANO, Boll. Mus. Torino xix, No. 471; *P. paviei*, **sp. n.**, MOCQUARD, Mission Pavie Indo-Chine iii, p. 486, pl. xxiii, fig. 3, Siam [= *P. siamensis*, Blgr.—REC.].
- Hemidactylus garnoti*, D. & B. Note by R. MCGREGOR, P. U. S. Mus. xxviii, p. 115.
- Sphaerodactylus grandisquamis*, **sp. n.**, STEJNEGER, Rep. U. S. Mus. for 1902, p. 602, figg., Vieques and Porto Rico.

EUBLEPHARIDÆ.

- Eublepharis macularius*, Blyth. On a Transcaspiian specimen: MICHAÏLOVSKY, Annuaire Mus. St. Petersb. ix, p. 39.

AGAMIDÆ.

- Draco volans*, L. Notes on living specimens: P. KREFFT, Zool. Garten xlv, p. 246.
- Acanthosaura fruhstorferi*, **sp. n.**, WERNER, Zool. Anz. xxvii, p. 461, Tonkin.
- Calotes brevipes*, **sp. n.**, WERNER, t. c. p. 462, Tonkin.
- Agama galliæ*, Filhol (foss.). Note by DE STEFANO, Atti Mus. Milano xlii, p. 390.
- Chlamydosaurus kingii*, Gray. Stated to have no femoral pores: BEDDARD, P. Z. S. 1904, ii, p. 82.
- Amphibolurus websteri*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 414, pl. xi, W. Australia.

IGUANIDÆ.

- Anolis principalis*, L., recorded from Bermuda by VERRILL, Tr. Connect. Ac. xi, 1903, p. 57, pl. i, fig. 5. On the changes of colour: PARKER & STARRATT, P. Amer. Ac. xl, p. 457. *A. elegans*, Blgr. = *A. fasciatus*, Blgr.: PERACCA, Boll. Mus. Torino xix, No. 465, p. 3. *A. lentiginosus*, O'Sh. Note by LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 88. *A. krugi*, Peters, figured by STEJNEGER, Rep. U. S. Mus. for 1902, pl. i; *A. monensis*, p. 646, figg., Mona, *evermanni*, p. 647, figg., Porto Rico, and *poncensis*, p. 665, figg., Porto Rico, **spp. nn.**, id. *ibid.*; *A. festæ*, **sp. n.**, PERACCA, t. c. p. 4, Ecuador.
- Liolaemus*, Wiegmann. Synopsis of the Chilean species by WERNER, Ergebn. Hamburg. Magalhaen. Sammelr. vii, p. 10; *L. lativittatus*, **sp. n.**, id. *ibid.* p. 8, pl. —, figg. 3 & 4, Chili; *L. (Saccodeira) proximus*, **sp. n.**, id. *ibid.* p. 12, pl. —, figg. 1 & 2, S. W. Patagonia [= *L. magellanicus*, H. & J.—REC.]
- Iguana europæa*, Filhol (foss.) Various bones described and figured by DE STEFANO, Atti Mus. Milano xlii, p. 393, pls. ix & x.
- Sceloporus undulatus*, Daud. Egg and embryos figured by DITMARS, Rep. New York Zool. Soc. 1903, p. 159. *S. merriami*, **sp. n.**, STEJNEGER, P. Soc. Washington xvii, p. 17, Rio Grande Valley, Texas.

ANGUIDÆ.

- Diploglossus cadurensis*, Filhol (foss.). Mandibles noticed and figured by DE STEFANO, Atti Mus. Milano xlii, p. 398, pl. ix, figg. 1, 4, 6.
- Ophisaurus ventralis*, L. Note on the eggs by DITMARS, Rep. New York Zool. Soc. 1903, p. 160. *O. gracilis*, Gray. Note on the habits by G. H. EVANS, J. Bombay Soc. xvi, p. 171.
- Propseudopus cayluxi*, **sp. n.** (foss.), DE STEFANO, t. c. p. 400, pl. ix, figg. 2, 5, 10, Miocene of Quercy, France.
- Placosaurus? rugosus*, Gerv. (foss.). Note by DE STEFANO, t. c. p. 43, pl. x, fig. 2.

ANNIELLIDÆ.

- W. R. COE & B. W. KUNKEL, Amer. Natural. xxxviii, pp. 487-490, figg., describe the reproductive organs of *Anniella pulchra*, Gray.

HELODERMATIDÆ.

- Heloderma suspectum*, Cope. Egg described and figured by DITMARS, Rep. New York Zool. Soc. 1903, p. 158, fig.

VARANIDÆ.

- Palæovaranus cayluxi*, Filhol (foss.). Note by DE STEFANO, Atti Mus. Milano xlii, p. 407, pls. ix & x. *P. filholi*, **sp. n.**, id. ibid. p. 408, Miocene of Quercy, France.

TEIIDÆ.

- Cnemidophorus sexlineatus*, L. Egg and embryos figured by DITMARS, Rep. New York Zool. Soc. 1903, p. 159.
- Arthrosaura versteegii*, **sp. n.**, VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 89, pl. vii, figg. 5 & 6, Surinam.
- Prionodactylus kockii*, **sp. n.**, VAN LIDTH DE JEUDE, t. c. p. 91, pl. vii, figg. 3 & 4, Surinam.
- Alopoglossus festæ*, **sp. n.**, PERACCA, Boll. Mus. Torino xix, No. 465, p. 7, Ecuador.
- Proctoporus simoterus*, O'Sh. Note by PERACCA, t. c. p. 9.

AMPHISBENIDÆ.

- Amphisbæna bakeri*, **sp. n.**, STEJNEGER, Rep. U. S. Mus. for 1902, p. 681, figg., Porto Rico; *A. haugi*, **sp. n.**, MOCQUARD, Bull. Mus. Paris 1904, p. 301, Gaboon.
- Lipidosternum laticeps* and *carceni*, **spp. nn.**, PERACCA, Boll. Mus. Torino xix, No. 460, pp. 3 & 5, figg., Matto Grosso, Brazil.

LACERTIDÆ.

- Tachydromus dorsalis*, **sp. n.**, STEJNEGER, Smithson. Collect. xlvii, p. 294, Loo Choo Ids.
- Gastrophalis*, Fisch. Synopsis of the species by WERNER, Zool. Anz. xxvii, p. 464. *G. prasina*, **sp. n.**, id. ibid. p. 462, German E. Africa.

Lacerta, L. Remarks on the affinities of the Mediterranean species : WERNER, Zool. Anz. xxvii, p. 254. *L. danfordii*, Gthr., redescribed by WERNER, t. c. p. 255. *L. viridis*, var. n. *intermedia*, MÉHELÿ, Allatt. Kozl. Magyar Tars. iii, p. 280, figg., S. W. Hungary ; *L. horvathi*, sp. n., MÉHELÿ, Ann. Mus. Hungar. ii, p. 362, figg., and Allatt. Kozl. Magyar Tars. iii, pp. 193 & 279, pl. v, S. W. Hungary. *L. lamandini*, Filhol (foss.). Note by DE STEFANO, Atti Mus. Milano xlii, p. 412.

Pseudolacerta, g. n. for *Lacerta mucronata*, Filhol (foss.), DE STEFANO, t. c. p. 413.

Eremias velox, Pall., and *arguta*, Pall., described and figured by ELPATIEBSKI, Amph. Rept. Aral Exped., pp. 11 & 18, pls. i & ii.

SCINCIDÆ.

Lygosoma elegantulum, Ptrs. & Doria = *Hinulia pardalis*, Macleay, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 80.

Ablepharus boutonii poecilopleurus, Wiegman. Note by R. MCGREGOR, P. U. S. Mus. xxviii, p. 117.

Eumeces quinquelineatus, L., is oviparous : DITMARS, Rep. New York Zool. Soc. 1903, p. 160. *E. scutatus*, Theob. On Transcasian specimens : MICHAÏLOVSKY, Annuaire Mus. St. Petersb. ix, p. 41, and VASILJEV, t. c. p. xiii.

Plestiodon cadurcensis, Filhol (foss.). Bones noticed and figured by DE STEFANO, Atti Mus. Milano xlii, p. 397, pl. x.

Scincus officinalis, Laur. On variations in the head-shields : A. SOKOLOWSKY, Biol. Centrbl. xxiv, p. 754, figg.

Protrachysaurus gaudryi, g. and spp. nn. (foss.), DE STEFANO, t. c. p. 406, pl. ix, Miocene of Quercy, France.

INCERTÆ SEDIS.

Thaumastosaurus bottii, g. and spp. nn. (foss.), DE STEFANO, Atti Mus. Milano xlii, p. 414, pl. ix, figg. 1 & 15, Miocene of Quercy, France.

RHIPTOGLOSSA.

G. TORNIER, Zool. Jahrb. Anat. xxi, pp. 1-40, pls. i & ii, has investigated the gular and occipital air-sacs of Chameleons.

F. E. BEDDARD, P. Z. S. 1904, ii, pp. 6-22, figg., writes on some points in the vascular system of Chameleons.

COUVREUR & GAUTIER, Ann. Soc. Linn. Lyon l, pp. 159 & 160, have made experiments on the respiration of Chameleons.

Palæochamæleo europæus, g. and sp. nn. (foss.), DE STEFANO, Atti Mus. Milano xlii, p. 391, pl. ix, figg. 7 & 12, Miocene of Quercy, France.

PYTHONOMORPHA.

On the systematic position and habits : S. W. WILLISTON, J. Geol. xii, pp. 43-51.

L. DOLLO, Mem. Soc. Belge Geol. xviii, pp. 207-216, pl. vi, reviews our knowledge of the Mosasaurs of Belgium, and, pp. 217-222, remarks on the derivation of the group from the Dolichosauria.

L. VAILLANT, Bull. Mus. Paris 1904, pp. 217 & 218, is inclined to refer the great "Sea Serpent" observed on the coast of Cochinchina to the Mosasaurs.

DOLICHOSAURIA.

- L. DOLLO, Mem. Soc. Belge Geol. xviii, pp. 217-222, and S. W. WILLISTON, J. Geol. xii, pp. 45-48, remark on the different views that have been expressed as to the phylogenetic relation between the Dolichosaurians and the Lacertilians and Pythonomorphs.

OPHIDIA.

- F. E. BEDDARD, P. Z. S. 1903, ii, pp. 319-328, figg., 1904, i, pp. 331-370, figg., 1904, ii, pp. 107-121, figg., and pp. 147-154, figg., writes on the anatomy of various groups of Snakes.
- E. BALLOWITZ brings out the first part of a work, "Entwicklungsgeschichte der Kreuzotter," Jena, 4to, dealing with the development of *Vipera berus*.
- H. DUBUISSON, C.R. Soc. Biol. lvii, pp. 286-288, 437 & 438, describes the resorption of the vitellus in the development of Vipers.
- R. S. N. PILLAY, Ann. Nat. Hist. (7) xiii, pp. 238 & 239, remarks on the dentition of some Indian Elapine Snakes.
- N. ROSÉN, Zool. Anz. xxviii, pp. 1-7, figg., writes on the muscles of the jaws of Snakes and on their mechanical relation to the poison-gland.
- A. BRANCA, Arch. zool. exp. Notes (4) ii, pp. xxxvii-xlv, has studied the epithelial covering of the sheath of the tongue in *Tropidonotus natrix*.
- F. CREVATIN, Anat. Anz. xxiv, pp. 539-542, figg., and U. CARPI, op. cit. xxv, pp. 225-230, figg., have studied the nerves in the transparent immovable eyelid of Snakes.
- T. NEUMANN, Ber. Senckenberg. Ges. 1904, pp. 72*-76*, remarks on poisonous Snakes and Snake poison.
- C. PHISALIX, C.R. Ac. Sci. cxxxviii, pp. 1459-1461, and C.R. Soc. Biol. lvi, pp. 976-978, remarks on the causes of the natural immunity of Snakes to their own poison, and op. cit. lvii, pp. 486-488, has further remarks on the difference between Viperid and Colubrid venom.
- L. ROGERS, Phil. Trans. B. cxcvii, pp. 123-191, has investigated the physiological action of Colubrine and Viperine venoms; R. H. ELLIOT, P. R. Soc. London lxxiii, pp. 183-190, that of *Naia tripudians*; R. H. ELLIOT, W. C. SILLAR, & G. S. CARMICHAEL, Phil. Trans. B. cxcvii, pp. 327-345, that of *Bungarus caeruleus*; and Sir T. R. FRASER & R. H. ELLIOT, t. c. pp. 249-279, that of *Enhydryna valakadien* and *Enhydryn curtus*.
- G. LAMB, Sci. Mem. India (2), No. 10, has further observations on Snake poisons.
- F. NÖC, Ann. Inst. Pasteur xviii, pp. 387-406, remarks on certain physiological properties of the different Snake poisons.
- F. WALL, J. Bombay Soc. xv, p. 524, records cases of Snakes feeding on other Snakes.

TYPHLOPIDÆ.

- Typhlops rostellatus*, sp. n., STEJNEGER, Rep. U. S. Mus. for 1902, p. 686, figg., Porto Rico; *T. kleebergi*, sp. n., WERNER, Zool. Anz. xxvii, p. 464, Usambara, German E. Africa.

BOIDÆ.

- On some points in their anatomy: BEDDARD, Ann. Nat. Hist. (7) xiii, p. 233, and P. Z. S. 1904, ii, p. 107, figg.

R. L. DITMARS, Bull. Zool. Soc. New York 1904, pp. 157-163, figg., has notes on the large Boas and Pythons in captivity.

Ungualia curta, Garm. = *U. pardalis*, Gundl., BARBOUR, Bull. Mus. Harvard xlvii, p. 59.

PALÆOPHIIDÆ.

Archæophis proavus, Massalongo (foss.). Note by JANENSCH, SB. Ges. naturf. Berlin 1904, p. 133, and Zeitschr. Deutsch. geol. Ges. lvi, Protok., p. 54.

COLUBRIDÆ.

Stoliczkaia khasiensis, Jerd., noticed and figured by ANNANDALE, J. Asiat. Soc. Bengal lxxiii, p. 210, pl. ix, fig. 2.

Polyodontophis grahami, sp. n., BOULENGER, Ann. Nat. Hist. (7) xiii, p. 132, Yunnan.

Tropidonotus natrix, L. On its mode of feeding : H. BARBIER, Feuille Natural. xxxiv, p. 55, fig. On albinos : J. BERNARDI, Boll. Naturalista xxiv, p. 12 ; on specimens from Leghorn, id. ibid. p. 71. *T. tessellatus*, Laur. Recorded from Gera, Germany, by TORNIER, SB. Ges. naturf. Berlin 1904, p. 197. On its habits in Hungary : VEITH, Allatt. Kozl. Magyar Tars. iii, pp. 229 & 239. *T. quadrilineatus*, p. 132, *octolineatus*, p. 133, and *pleurotænia*, p. 133, spp. nn., BOULENGER, Ann. Nat. Hist. (7) xiii, Yunnan.

Eutænia butleri, Cope, redescribed, with notes on the habits and affinities, by RUTHVEN, Biol. Bull. vii, p. 289, fig.

Liopholidophis, g. n., for *Tropidonotus lateralis*, D. & B. and allies : MOCQUARD, Bull. Mus. Paris 1904, p. 302. *L. grandidieri*, sp. n., id. ibid. p. 304, Madagascar.

Pseudoxenodon sinensis, sp. n., BOULENGER, Ann. Nat. Hist. (7) xiii, p. 134, S. China.

Hydræthiops levis, sp. n., BOULENGER, t. c. p. 450, S. Cameroon.

Siebenrockia, n. n. for *Simocephalus*, Gthr., nec Schödl., Poche, Zool. Anz. xxviii, p. 38 = *Mehelya*, Csiki, 1903, CSIKI, t. c. p. 267.

Liparophis, g. n., near *Tapinophis*, Blgr., PERACCA, Rev. Suisse Zool. xii, p. 663 ; *L. bedoti*, sp. n., id. ibid. p. 664, China.

Trachischium læve, sp. n., PERACCA, t. c. p. 665, E. Indies.

Aspidura drummondhayi, sp. n., BOULENGER, Spolia Zeylan. ii, p. 95, pl. —, Ceylon.

Lumprophis rogeri, sp. n., MOCQUARD, Bull. Mus. Paris 1904, p. 307, Abyssinia.

Pseudoxyrhopus dubius, sp. n., MOCQUARD, t. c. p. 305, Madagascar.

Dendrophis bifrenalis, Blgr. Further notes by WILLEY, Spolia Zeylan. i, p. 116.

Dromicus. Leimadophis stahli, sp. n., STEJNEGER, Rep. U. S. Mus. for 1902, p. 695, figg., Porto Rico.

Alsophis vudii, Cope. Note by BARBOUR, Bull. Mus. Harvard xlvii, p. 60.

Coronella austriaca, Laur. On its mode of feeding : H. BARBIER, Feuille Natural. xxxiv, p. 58.

Contia walteri, Boettg. Note by MICHAILEVSKY, Annuaire Mus. St. Petersburg. ix, p. 43 ; *C. angusticeps*, Blgr., figured by ANNANDALE, J. Asiat. Soc. Bengal lxxiii, pl. ix, fig. 1.

Atractus micheli, sp. n., MOCQUARD, Bull. Mus. Paris 1904, p. 301, French Guiana ; *A. vertebralis*, sp. n., BOULENGER, Ann. Nat. Hist. (7) xiii, p. 451, Peruvian Andes.

Hypsirhina multilineata, sp. n., TIRANT, Mission Pavie Indo-Chine iii, p. 484, Cochinchina.

- Dipsadomorphus trigonatus*, Schneid., var. n. *melanocephalus*, ANNANDALE, J. Asiat. Soc. Bengal lxxiii, p. 210, pl. ix, fig. 4, Perso-Baluchistan frontier.
- Oxyrhopus bicolor*, sp. n., PERACCA, Rev. Suisse Zool. xii, p. 667, Santa Fé, Argentina.
- Tachymenis peruviana*, Wiegman. On colour varieties: WERNER, Ergebn. Hamburg. Magelhaen. Sammelr. vii, p. 14.
- Apostolepis borellii*, sp. n., PERACCA, Boll. Mus. Torino xix, No. 460, p. 9, fig., Matto Grosso, Brazil.
- Distira gillespiei*, Blgr. On a specimen from the Malabar coast: F. WALL, J. Bombay Soc. xv, p. 723, fig.
- Apistocalumys pratti*, sp. n., BOULENGER, Ann. Nat. Hist. (7) xiii, p. 451, Owen Stanley Range, N. Guinea.
- Acanthophis pyrrhus*, Blgr. Note by BOULENGER, op. cit. xiv, p. 415.
- Boulengerina christyi*, sp. n., BOULENGER, t. c. p. 14, Leopoldville, Congo.
- Elapechis duttoni*, sp. n., BOULENGER, t. c. p. 15, Leopoldville, Congo.
- Naia tripudians*, Merr. On a specimen eating eggs: C. P. GEORGE, J. Bombay Soc. xvi, p. 174.

VIPERIDÆ.

- Vipera berus*, L. On variations in British specimens: G. LEIGHTON, P. Phys. Soc. Edinb. xv, p. 130, pl. iii & xvi, pl. 1. *V. berus*, L., var. *bosniensis*, Boettg. Note by MÉHELÿ, Allatt. Kozl. Magyar Tars iii, p. 285, fig. *V. russellii*, Shaw. On a very large specimen: L. L. FENTON, J. Bombay Soc. xvi, p. 173. *V. ammodytes*, L., var. n. *montandoni*, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 134, Roumania.
- Lachesis monticola*, Jerd., is oviparous: G. A. MILLER, J. Bombay Soc. xv, p. 729.
- Crotalus scutulatus*, Kenn. Note by A. E. BROWN, P. Ac. Philad. lv, p. 625.

ORNITHOSAURIA.

- S. W. WILLISTON, Geol. Mag. (v) i, p. 59, remarks on the homologies of the fingers of the Pterodactyls, the patagial finger being regarded as the fourth.
- Pteranodon longiceps*, Marsh, figured, with notes on the sclerotic circle and the vertebræ, by EATON, Amer. J. Sci. (4) xvii, p. 318, pls. xix & xx.

ORTHOPODA.

- F. NOPCSA, Denk. Ak. Wien lxxiv, pp. 256-260, figg., remarks on the so-called prædentary bone of Orthopods.
- Trachodon*, Leidy. Notes and figures of the skeleton by F. A. LUCAS, Smithsonian. Collect. i, p. 317, figg., pls. lxxii & lxxiii.
- Mochlodon suessi*, Bunz. Further descriptions and figures of various parts of the skull: NOPCSA, t. c. p. 229, figg., 2 pls.
- Claosaurus annectens*, Marsh. On the entire skeleton: BEECHER, Tr. Connect. Ac. xi, 1903, pp. 311-323, pls. xli-xlv.
- Eubrontes platypus*, n. n. for *Amblonyx giganteus*, Hitchcock, LULL, Mem. Boston Soc. v, p. 512.

DINOSAURIA.

- H. F. OSBORN, Science (2) xix, pp. 255 & 256, remarks on the position of the bones of the fore-arm in the Sauropoda.
- H. G. SEELEY, Ann. Nat. Hist. (7) xiv, p. 341, remarks on the pneumatic foramina in Dinosaurian vertebræ.
- H. F. OSBORN, Bull. Amer. Mus. xx, pp. 181-190, figg., remarks on the structure of the manus, sacrum, and caudal vertebræ of *Diplodocus* and *Brontosaurus*.
- Monoclonius canadensis*, **sp. n.**, LAMBE, Tr. R. Soc. Canada x, iv, p. 7, pl. 11. On the skull: LAMBE, Ottawa Natural. xviii, p. 33, pl. ii.
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- L. v. MÉHELÿ, *Math. naturw. Ber. Ungarn* xx, pp. 239-259, figg., describes and comments upon a *Pelobates fuscus* with supernumerary fore limb.
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- LILIAN V. SAMPSON, Amer. J. Anat. iii, pp. 473-504, figg., 2 pls., has a contribution to the embryology of *Hylodes martinicensis*.
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- E. BATAILLON, C.R. Soc. Biol. lvi, pp. 749-751, has made further experiments on parthenogenetic segmentation of the ova of *Bufo vulgaris*.
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- A. SCHAPER, Anat. Anz. xxiv, pp. 305-326, figg., has studied the development of the lens in *Rana esculenta*.
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- R. G. HARRISON, Amer. J. Anat. iii, pp. 197-220, figg., has made an experimental study of the relation of the nervous system to the developing musculature in Frog embryos.
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- G. BOHN, C.R. Soc. Biol. lvi, pp. 633 & 634, 767 & 768, 789-792, has made experiments on the influence of the sun-rays on the eggs of Frogs and Toads in the evolution of the embryo and early larval stages.
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V. PISCES.

BY

G. A. BOULENGER, F.R.S.

CONTENTS.

	Page		Page
I. TITLES	1	Systematic (<i>continued</i>).	
II. GENERAL SUBJECT . . .	19	Apodes	44
III. FAUNÆ	20	Ostariophysi	45
IV. PALÆONTOLOGY	23	Malacopterygii	49
V. REFERENCES ARRANGED		Ganoidei	51
SYSTEMATICALLY		Holostei	51
Teleostomi	24	Chondrostei	52
Teleostei	24	Dipneusti	52
Plectognathi	25	Crossopterygii	52
Pediculati	26	Ostracophori	53
Acanthopterygii	26	Chondropterygii	53
Anacanthini	39	Holocephali	53
Percesoces	40	Plagiostomi	53
Catosteomi	42	Ichthyotomi	56
Heteromi	42	Acanthodii	56
Haplomi	42	Cycliæ	56
		Cyclostomi	56
		Leptocardii	57

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II. GENERAL SUBJECT.

Vol. VII. of the Cambridge Natural History is mainly devoted to the Fishes. The general part and the non-Teleostean orders by T. W. BRIDGE, the Teleosteans by G. A. BOULENGER, the Leptocardii by W. A. HERDMAN.

H. WOODWARD, J. R. Micr. Soc. 1904, pp. 138-141, remarks on the evolution of Fishes in time.

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V. REFERENCES ARRANGED SYSTEMATICALLY.

TELEOSTOMI.

TELEOSTEI.

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F. SUPINO brings out the three first fascicles of a work on the morphology of the Teleostean skull. These fascicles deal with the *Percidæ*, *Serranidæ*, *Berycidæ*, and *Trichiuridæ*.

F. SUPINO, Rend. Acc. Lincei xiii, ii, pp. 625-631, remarks on the skull of Teleosteans, in relation to the mode of life.

J. DEWITZ, Anat. Anz. xxiv, pp. 408-410, remarks on his share in the work of E. P. Allis on the skull of *Scomber scombrus*.

R. HAMBURGER, Rev. Suisse Zool. xii, pp. 71-148, pls. ii & iii, has studied the structure of the limbs of Teleosts (*Leuciscus*, *Trigla*, *Periophthalmus*, *Lophius*).

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A. JAEGER, Ber. Senckenberg. Ges. 1904, pp. 63*-72*, remarks on the swim-bladder.

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U. BÖHI, Morphol. Jahrb. xxxii, pp. 505-586, figg., pl. xiii, has studied the development of the body-cavity and of the genital gland in *Salmo salar* and *S. fario*.

C. H. EIGENMANN, Mark Anniv. Vol. pp. 167-204, pls. xii-xv, has further observations on the eye of *Amblyopsis*.

P. E. SARGENT, Mark Anniv. Vol. pp. 399-416, pl. xxix, writes on the torus longitudinalis of the Teleostean brain.

J. CAMERON, J. Anat. Physiol. norm. path. (2) xviii, pp. 279 & 280, remarks on the superior commissure of the brain in Teleosteans.

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E. EHRENBAUM, Wiss. Meeresuntersuch. vi, Helgoland, pp. 127-200, fig., pls iii-xvi, continues his descriptions of the breeding habits, eggs, and larval forms of the North Sea Fishes, and the same author, in collaboration with S. STRODTMANN, t. c. pp. 57-126, figg., contributes a first report on the eggs and postlarval forms of the Baltic Fishes.

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- Pseudomonacanthus analis*, **sp. n.**, WAITE, Rec. Austral. Mem. v, p. 173, fig., Lord Howe Is.
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- Balistes fuscolineatus*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, No. 4, p. 9, fig., Honolulu; *B. verres*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 153, pl. xxvi, Pacific Coast of C. America.

PEDICULATI.

- Melanocetus rotundatus*, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xv.
- Antennarius laysianus*, **sp. n.**, JORDAN & SNYDER, P. U. S. Mus. xxvii, p. 947, Laysan Is.; *A. nexilis* and *duescus*, **spp. nn.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 537, pl. xiii, figg. 23 & 24, Hawaiian Ids.
- Histiomotophorus*, **n. n.** for *Histioccephalus*, Zigno nec Diesing, EASTMAN, Bull. Mus. Harvard xlvii, p. 32; *H. bassani*, Zigno (foss.), redescribed and figured, id. ibid. p. 32, fig., pl. i, figg. 1-3. Referred to the *Antennariidae* by GILL, Science (2) xx, p. 845.

ACANTHOPTERYGII.

TRACHYPTERIDÆ.

- Trachypterus ishikawæ*, Jord. & Snyder (= *ijimæ*, Jord. & Snyder), redescribed and figured by JORDAN & SNYDER, Smithson. Collect. i, p. 240, pl. lxiii.
- Regalecus parkeri*, **sp. n.**, BENHAM, Tr. N. Zealand Inst. xxxvi, p. 198, pl. ix, New Zealand.

OPHIDIIDÆ.

- Lepophidium fluminense*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 44, Coast of Brazil.

ZOARCIDÆ.

- On the North European and Greenland *Lycodinae*: A. S. JENSEN, Danish Ingolf-Exped. iii, No. 4.
- Lycodes pallidus*, Coll., var. n. *squamiventer*, JENSEN, t. c. p. 39, pl. iv, fig. 2, off Iceland and the Faroes; *L. reticulatus*, Reinh., var. n. *microcephalus*, id. ibid. p. 66, pl. viii, fig. 1, N. E. Greenland.
- Lycenchelys kolthoffi*, **sp. n.**, JENSEN, t. c. p. 88, figg., pl. x, fig. 2, and Medd. Gronland xxix, p. 261, pl. xiii, fig. 1, N. E. Greenland.
- Selachophidium guentheri*, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xvii.
- Dinematicthys longifilis*, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 185, pl. xxiv, fig. 5.

- Lucifuga subterraneus*, Poey. Gravid specimen described and figured by EIGENMANN, Bull. U. S. Fish Comm. f. 1902, p. 236, pl. xxi.
Stygicola dentatus, Poey. Noticed and figured by EIGENMANN, t. c. p. 236, pl. xxi.

BATRACHIDÆ.

- Batrachoides boulengeri*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 182, pl. xxxi, Pacific Coast of C. America.
Porichthys greenei, **sp. n.**, GILBERT & STARKS, t. c. p. 184, pl. xxx, Panama.

BLENNIIDÆ.

- Blennius pholis*, L. Note on the egg, McINTOSH, Rep. Brit. Ass. 1903, p. 697.
Hypsoblennius piersoni, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 191, pl. xxxii, fig. 60, Panama.
Homesthes caulopus, Gilb., figured by GILBERT & STARKS, t. c. pl. xxxii, fig. 61.
Ericteis, **g. n.**, near *Lepisoma*, for *E. kalisheræ*, **sp. n.**, JORDAN, Bull. U. S. Fish Comm. xxii, p. 543, pl. ii, fig. 4, Tortugas Archipelago.
Collybus, **g. n.**, near *Taractes*, for *C. drachme*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 525, pl. ix, fig. 16, Hawaiian Ids.
Aspidonotus brunneolus, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 510, fig., Honolulu.
Auchenopterus mexicanus, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 269, pl. xxix, La Paz, Lower California.
Tripterygium minor, Kolomb. Note by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 9. *T. rufopileum*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 182, pl. xxiv, fig. 4, Lord Howe Is.; *T. atriceps*, **sp. n.**, O. P. JENKINS, t. c. p. 505, fig., Honolulu.
Petroscirtes icelii, Ogilby, figured by WAITE, t. c. pl. xxiv, fig. 3; *P. vinci-guerræ*, **sp. n.**, CLEMENTINA BORSIERI, Ann. Mus. Genova (3) i, p. 211, Coast of Erythræa.
Salarias nigripes, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 127, Guam Is.; *S. cypho*, p. 506, fig., *saltans*, p. 508, fig., and *rutilus*, p. 509, fig., **spp. nn.**, O. P. JENKINS, t. c. Honolulu; *S. furcatus*, **sp. n.**, JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 213, pl. i, fig. 4, Gulf of Manaar.
Emblemaria oculocirrus, Jord., redescribed by RUTTER, P. Calif. Ac. Zool. (3) iii, p. 252.
Lumpenus lampetiformis, Walb. On a specimen from the N. E. Coast of England, A. MEEK, Tr. Northumb. Soc. (2) i, p. 36.

CERDALIDÆ.

- Cerdale ionthas*, J. & G., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxxi, fig. 58.
Microdesmus retropinnis, J. & G., figured by GILBERT & STARKS, t. c. pl. xxxi, fig. 59.

GOBIESOCIDÆ.

- Lepadogaster bimaculatus*, Penn., and *microcephalus*, Brook, described and figured by GUITEL, Arch. Zool. exp. (4) ii, p. 357, figg., pl. xv.
Diplocrepis costatus, Ogilby, figured by WAITE, Rec. Austral. Mus. v, pl. xxiv, fig. 1.
Lepadichthys, **g. n.**, allied to *Gobiesox*, for *L. frenatus*, **sp. n.**, WAITE, t. c. p. 180, pl. xxiv, fig. 2, Lord Howe Is.

TRICHONOTIDÆ.

- Trichonotus setigerus*, Bl. Schn., noticed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 215, pl. i, fig. 7.
Limnichthys, **g. n.**, for *L. fasciatus*, **sp. n.**, WAITE, Rec. Austral. Mus. v, pp. 178 & 243, pl. xxiii, fig. 4, Lord Howe Is. and New South Wales.
Schizochirus, **g. n.**, allied to *Limnichthys*, WAITE, t. c. p. 241; *S. insolens*, **sp. n.**, id. ibid. p. 242, figg., pl. xxvi, fig. 3, New South Wales.

URANOSCOPIDÆ.

- Gnathagnus innotabilis*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 238, pl. xxvi, fig. 1, New South Wales.

NOTOTHENIIDÆ.

- Synopsis of the genera by DOLLO, Rés. Voy. Belgica, Poiss. p. 17.
Cryodraco antarcticus, Dollo, described and figured by DOLLO, t. c. p. 20, pl. 1 & pl. v, fig. 7.
Gerlachea australis, Dollo, described and figured by DOLLO, t. c. p. 25, pl. ii, fig. 1 & pl. v, fig. 2.
Racovitzia glacialis, Dollo, described and figured by DOLLO, t. c. p. 29, pl. ii, figg. 2 & 3, pl. v, fig. 3.
Hypsicometes heterurus, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 43, Coast of Brazil.
Bovichthys roseo-pictus, **sp. n.**, HUTTON, Tr. N. Zealand Inst. xxxvi, p. —, New Zealand.
Draconetta, Jord. & Fowl. On its affinities: REGAN, Ann. Nat. Hist. (7) xiv, p. 130.—*D. acanthopoma*, **sp. n.**, id. ibid., North Atlantic.

LEPTOSCOPIDÆ.

- Neopercis binivirgata*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 236, pl. xxv, fig. 3, New South Wales.

PERCOPHIIDÆ.

- Embolichthys*, Jord. On its relationship to *Hemerocoetes* and *Ammodytes*. GILL, P. U. S. Mus. xxviii, p. 160.

TRIGLIDÆ.

- Trigla picta*, Gthr. (*guttata*, Philippi, 1896). Note by DELFIN, Revist. chilena viii, p. 12, fig.; *T. queketti*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiv, p. 128, Natal.
Lepidotrigla guentheri, Hilg., and *microptera*, Gthr., redescribed by JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, pp. 594 & 595; *L. abyssalis*, **sp. n.**, id. ibid. p. 595, fig., Japan.
Prionotus ruscarius, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 165, pl. xxvii, Pacific Coast of C. America.
Peristedion amiscus, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 593, pl. iii, figg. 1 & 2, Japan; *P. roseum*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 37, Coast of Brazil.

AGONIDÆ.

- Review of the Japanese species by JORDAN & STARKS, P. U. S. Mus. xxvii, pp. 575–599, figg.
Percis cephalopunctatus, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 124, Guam Is.

- Agonomalus jordani*, **sp. n.** (SCHMIDT), JORDAN & STARKS, t. c. p. 581, fig., Japan.
Occa iburia, **sp. n.**, JORDAN & STARKS, t. c. p. 585, fig., Japan.
Podotheucus tokubire, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 15, Japan.
Xeneretmus infraspinatus, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 262, pl. xxvii, off Cape Flattery, Washington Territory.

CYCLOPTERIDÆ.

- Trimegistus*, **g. n.**, near *Liparis*, for *T. owstoni*, **sp. n.**, JORDAN & SNYDER, Smithson. Collect. i, p. 238, pl. lviii, Japan. Referred to *Liparis* and figured by P. SCHMIDT, P. U. S. Mus. xxviii, p. 189, figg., and Annuaire Mus. St. Petersb. ix, p. xvii.

COTTIDÆ.

Review of the *Cottidæ* of Japan by JORDAN & STARKS, P. U. S. Mus. xxvii, pp. 231-335, figg.

- Stlengis*, **g. n.**, for *S. osensis*, **sp. n.**, JORDAN & STARKS, t. c. p. 236, fig., Japan.
Schmidtia, **g. n.** [changed to *Schmidtina*, p. 961], for *S. misakia*, **sp. n.** JORDAN & STARKS, t. c. p. 237, fig., Japan.
Daruma, **g. n.**, for *D. sugamia*, **sp. n.**, JORDAN & STARKS, t. c. p. 241, fig., Japan.
Ricuzenius, **g. n.**, JORDAN & STARKS, t. c. p. 242; *R. pinetorum*, **sp. n.**, iid. ibid. p. 243, fig., Japan.
Hemilepidotus gilberti, **sp. n.**, JORDAN & STARKS, t. c. p. 254, fig., Japan.
Ceratocottus namiyei, **sp. n.**, JORDAN & STARKS, t. c. p. 259, fig., Japan.
Cottus quadricornis, L. On its freshwater varieties: LÖNNBERG, Bull. Geol. Inst. Upsala vi, p. 85, figg.—*C. kasika*, **sp. n.**, JORDAN & STARKS, t. c. p. 265, fig., Japan.
Arteidiellus uncinatus, Reinh., figured by JENSEN, Medd. Gronland xxix, pl. xii, fig. 2.
Rheopresbe, **g. n.**, JORDAN & STARKS, t. c. p. 269; *R. fujiyamæ*, **sp. n.**, iid. ibid. p. 270, fig., Japan.
Myoxocephalus edomius and *raninus*, **spp. nn.**, JORDAN & STARKS, t. c. pp. 274 & 277, figg., Japan.
Ainocottus, **g. n.**, for *A. ensiger*, **sp. n.**, JORDAN & STARKS, t. c. p. 283, fig., Japan.
Caracanthus maculatus, Gray, redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 491.
Gymnocanthus herzensteini, **sp. n.**, JORDAN & STARKS, t. c. p. 294, fig., Japan.
Crossias, **g. n.**, for *C. allisi*, **sp. n.**, JORDAN & STARKS, t. c. p. 296, fig., Japan.
Cottiusculus, **g. n.** (SCHMIDT), JORDAN & STARKS, t. c. p. 298; *C. gonez* and *schmidtii*, **spp. nn.**, iid. ibid. pp. 298 & 299, figg., Japan.
Alcichthys, **g. n.**, for *Centridermichthys alcicornis*, Herz., JORDAN & STARKS, t. c. p. 301.
Furcina, **g. n.**, JORDAN & STARKS, t. c. p. 303; *F. ishikawæ* and *osimæ*, **spp. nn.**, iid. ibid. pp. 303 & 305, figg., Japan.
Ocynectes, **g. n.**, JORDAN & STARKS, t. c. p. 306; *O. maschalis*, **sp. n.**, iid. ibid. p. 307, fig., Japan.
Pseudobleennius zonostigma and *totomius*, **spp. nn.**, JORDAN & STARKS, t. c. pp. 312 & 315, figg., Japan.
Bero, **g. n.**, for *Centridermichthys elegans*, Stdr., JORDAN & STARKS, t. c. p. 317.
Vellitor, **n. n.**, for *Podabrus*, Rich. nec Fisch., JORDAN & STARKS, t. c. p. 318.

- Blepsius draciscus*, **sp. n.**, JORDAN & STARKS, t. c. p. 322, fig., Japan.
Thecopterus, **g. n.**, near *Dasycottus* and *Malacocottus*, for *T. aleuticus*,
sp. n., H. M. SMITH, P. Soc. Washington xvii, p. 163, fig., Behring
 Sea.
Hemitrepterus nipponicus, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 14,
 pl. vii, fig. 2, Japan.
Cottunculus macrocephalus, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii,
 p. 7, Cape of Good Hope, 190 fath.

COMEPHORIDÆ.

- A. KOROTNEFF, Biol. Centrbl. xxiv, pp. 641-644, figg., has remarks on the
 gills and teeth of *Comephorus baicalensis*, Dyb.
Comephorus baicalensis, Dyb. Note on the habits, KOROTNEFF, Arch.
 Zool. exp. (4) ii, p. 15, fig.; *C. dybowskii*, **sp. n.**, id. ibid. p. 17, figg.
 L. Baikal.

SCORPÆNIDÆ.

- Review of the Japanese species by JORDAN & STARKS, P. U. S. Mus. xxvii,
 pp. 91-175, figg., pls. i & ii.
Sebastes maderensis, Lowe, redescribed by KOLOMBATOVIĆ, Glasnik Naravosl.
 druzt. xv, p. 5.
Sebastodes itinus, p. 99, fig., *guentheri*, p. 102, fig., *tokionis*, p. 104, fig.,
iracundus, p. 107, fig., and *flammeus*, p. 108, **spp. nn.**, JORDAN &
 STARKS, t. c. Japan.
Neosebastes entaxis, **sp. n.**, JORDAN & STARKS, t. c. p. 120, fig., Japan.
Thysunichthys, **g. n.**, near *Sebastodes*, JORDAN & STARKS, t. c. p. 122;
T. crossotus, **sp. n.**, iid. ibid. p. 123, fig., Japan.
Sebastiscus, **g. n.**, for *Sebastes marmoratus*, C. & V., JORDAN & STARKS,
 t. c. p. 124.
Sebastopsis kelloggi, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii,
 p. 492, fig., Honolulu.
Sebastapistes corallicola, p. 493, fig., *coniorta*, p. 495, fig., and *galactacma*,
 p. 496, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu.
Helicolenus emblemarius, **sp. n.**, JORDAN & STARKS, t. c. p. 129, fig.,
 Japan.
Scorpena, Art., A. BRIOT, C.R. Soc. Biol. lvii, pp. 666, has ascertained by
 experiments that the stings of the Mediterranean species are not
 poisonous; *S. izensis*, **sp. n.**, JORDAN & STARKS, t. c. p. 134, fig.,
 Japan.
Pontinus corallinus, **sp. n.**, MIRANDA RIBEIRA, A Lavoura 1904, p. 35,
 Coast of Brazil.
Scorpenopsis cocopsis, Jenkins, redescribed and figured by SEALE, Pap.
 B. P. Bishop Mus. i, No. 4, p. 11, fig.
Lythrichthys, **g. n.**, near *Setarches*, for *L. eulabes*, **sp. n.**, JORDAN & STARKS,
 t. c. p. 140, fig., Japan.
Pterois nigripinnis, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 2,
 Natal.
Ebosia, **g. n.**, for *Pterois bleekeri*, Stdr. & Döderl., JORDAN & STARKS, t. c.
 p. 145.
Dendrochirus chloreus, **sp. n.**, O. P. JENKINS, t. c. p. 498, fig., Honolulu.
Apistus evolans and *venenans*, **spp. nn.**, JORDAN & STARKS, t. c. pp. 146 &
 148, figg., Japan.
Minous echigoniis, **sp. n.**, JORDAN & STARKS, t. c. p. 153, fig., Japan.
Decterias, **g. n.**, for *Minous pusillus*, Schleg., JORDAN & STARKS, t. c.
 p. 154.

- Tetraroge kagoshimensis*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 13, pl. viii, fig. 1, Japan.
- Aploactis aspersa*, Temm. & Schleg., noticed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 219, pl. i, fig. 5.
- Synancia thersites*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 121, Guam Id.
- Erosa*, **g. n.**, for *Synancia erosa*, Langsd., JORDAN & STARKS, t. c. p. 156.
- Inimicus*, **g. n.**, for *Pelor japonicus*, C. & V., JORDAN & STARKS, t. c. p. 158.
- Ocosia*, **g. n.**, near *Agriopus*, for *O. vespa*, **sp. n.**, JORDAN & STARKS, t. c. p. 162, fig., Japan.
- Erispex*, **g. n.**, for *Cocotropus pottii*, **sp. n.**, JORDAN & STARKS, t. c. p. 170.

GOBIIDÆ.

- E. R. WAITE, Rec. Austral. Mus. v, pp. 277-286, pls. xxxiv-xxxvi, reviews the *Eleotris* and their allies of New South Wales.
- Gobius æolosoma*, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 176, pl. xxiii, fig. 2; *G. parvus*, Meek, and *claytoni*, Meek, figured by S. E. MEEK, Field Mus. Zool. v, pl. xvii; *G. steindachneri*, Kolomb. = *G. kneri*, Sldr., redescribed by CLEMENTINA BORSIERI, Ann. Mus. Genova (3) i, p. 7; *G. deltoides*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 125, Guam Id.; *G. elongatus*, **sp. n.** (foss.), SIMIONESCU, Verh. geol. Reichsanst. 1904, p. 149, and Publ. Adamachi Ac. Romana, No. xii, p. 15, pl. ii, fig. 2, Eocene of Roumania.
- Microgobius miraflorensis*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 176, pl. xxix, fig. 54, Panama.
- Evermannia panamensis*, **sp. n.**, GILBERT & STARKS, t. c. p. 179, pl. xxx, fig. 55, Panama.
- Chlamydes*, **g. n.**, near *Gobius*, for *C. laticeps*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 503, fig., Honolulu.
- Gobionellus lonchotus*, **sp. n.**, O. P. JENKINS, t. c. p. 503, fig., Honolulu; *G. microdon*, Glb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxviii, fig. 51.
- Garmannia paradoxa*, Gthr., figured by GILBERT & STARKS, t. c. pl. xxvii, fig. 52.
- Enypnius seminudus*, Gthr., figured by GILBERT & STARKS, t. c. pl. xxix, fig. 53; *E. oligolepis*, **sp. n.**, O. P. JENKINS, t. c. p. 504, fig., Honolulu.
- Ctenogobius tortugæ*, **sp. n.**, JORDAN, Bull. U. S. Fish Comm. xxii, p. 541, pl. i, fig. 1, Tortugas Archipelago.
- Gnatholepis thompsoni*, **sp. n.**, JORDAN, t. c. p. 541, pl. i, fig. 2, Tortugas Archipelago.
- Clevelandia ios*, J. & G. Note by GILBERT, P. Calif. Ac. Zool. (3) iii, p. 263.
- Elacatinus*, **g. n.**, allied to *Gobiosoma*, for *E. oceanops*, **sp. n.**, JORDAN, t. c. p. 542, pl. ii, fig. 3, Tortugas Archipelago.
- Allogobius*, **g. n.**, intermediate between *Gobius* and *Oxymetopon*, WAITE, Rec. Austral. Mus. v, p. 176; *A. viridis*, **sp. n.**, id. ibid. p. 177, pl. xxiii, fig. 3, Lord Howe Id.
- Eviota*, **g. n.**, near *Oxymetopon*, Blkr., for *E. epiphanes*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 501, fig., Honolulu.
- Leucopsarion petersii*, Hilg., figured, with notes on the habits and eggs, by KITAHARA, Annot. zool. Japon. v, p. 113, pl. v.
- Eleotris sandwicensis*, Vaill. & Sauv., redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 499; *E. miniatus*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 125, Guam Id.

- Pycnomma*, **g. n.**, near *Gymneleotris*, for *P. semisquamatus*, **sp. n.**, RUTTER, P. Calif. Ac. Zool. (3) iii, p. 252, pl. xxiv, Gulf of California.
- Carassiops compressus*, Krefft, and *galii*, Ogilby, figured by WAITE, Rec. Austral. Mus. v, pl. xxxiv, figg. 1 & 2.
- Krefftius adpersus*, Cast., *australis*, Krefft, and *coxi*, Krefft, figured by WAITE, t. c. pl. xxxv, figg. 1 & 2, & xxxvi, fig. 1.
- Philypnodon grandiceps*, Krefft, figured by WAITE, t. c. pl. xxxvi, fig. 2.
- Asterropteryx semipunctatus*, Rüpp., redescribed by O. P. JENKINS, t. c. p. 500.

PLEURONECTIDÆ.

- Hippoglossus vulgaris*, Flem., and *hippoglossoides*, Walb. On pelagic post-larval stages : J. SCHMIDT, Meddel. Komm. Havunders., Fisk. i, No. 3, 1 pl.
- Atheresthes evermanni*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 621, pl. vi, fig. 1, Japan.
- Cleisthenes*, **g. n.**, near *Hippoglossoides*, for *C. pinetorum*, **sp. n.**, JORDAN & STARKS, t. c. p. 622, fig., Japan.
- Alæops*, **g. n.**, near *Poecilopsetta*, for *A. plinthus*, **sp. n.**, JORDAN & STARKS, t. c. p. 623, pl. v, fig. 2, Japan.
- Paralichthys olivaceus*, Temm. & Schleg., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2 ; *P. triocellatus*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura 1904, p. 49, Coast of Brazil.
- Platophrys dimorphus*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 10, Natal.
- Pseudorhombus natalensis* and *andersoni*, **spp. nn.**, GILCHRIST, t. c. pp. 8 & 9, Natal.
- Arnoglossus macrolepis*, **sp. n.**, GILCHRIST, t. c. p. 12, Natal.
- Psettylis pellucida*, Alc., and *ocellata*, Alc. Discussed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 207, pl. i, fig. 3, & pl. ii.
- Dexistes*, **g. n.**, near *Pseudopleuronectes*, for *D. rikuzenius*, **sp. n.**, JORDAN & STARKS, t. c. p. 624, pl. vi, fig. 1, Japan.
- Pleuronectes*, L. On the larval and post-larval stages of the Danish species : PETERSEN, Meddel. Komm. Havunders., Fisk. i, No. 1, pl. ii. *P. platessa*, L. On its habits : JOHANSEN, t. c. No. 2. On its introduction in Australia : DANNEVIG, Rep. Fisher. N. S. W. f. 1902, ii (1903), p. 5. On a malformed specimen : J. JOHNSTONE, P. Liverp. biol. Soc. xviii, p. 111, pl. i. On its fecundity : R. D. LAURIE, t. c. p. 153. On the migration and growth : A. MEEK, Rep. Sci. Observ. Northumb. Fisher. Comm. 1904, p. 70. On the spawning season : HERDMAN, Nature lxi, pp. 465 & 488, and FULTON, t. c. p. 535. *P. cynoglossus*, L. On the post-larval and early young stages : H. C. WILLIAMSON, Rep. Fish. Board Scotland xxii, iii, p. 270, pl. xvi.
- Drepanopsetta platessoides*, Fabr. On the larval and post-larval stages : PETERSEN, Meddel. Komm. Havunders., Fisk. i, No. 1, pl. i.
- Araias*, **g. n.**, near *Pleuronectes*, for *A. ariommus*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 624, pl. vi, fig. 2, Japan.
- Verecqua*, **g. n.**, near *Microstomus* and *Limanda*, for *V. achne*, **sp. n.**, JORDAN & STARKS, t. c. p. 625, pl. vii, fig. 1, Japan.
- Microstomus kitahare*, **sp. n.**, JORDAN & STARKS, t. c. p. 625, pl. vii, fig. 2, Japan.
- Engyrosopon ijimæ*, **sp. n.**, JORDAN & STARKS, t. c. p. 626, pl. viii, fig. 1, Japan.
- Ancylosetta dendritica*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. lxii.
- Solea turbynei* and *fulvomarginata*, **spp. nn.**, GILCHRIST, Mar. invest. S. Africa iii, pp. 10 & 13, Cape of Good Hope.

- Gymnachirus zebrinus*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura 1904, p. 50, Coast of Brazil.
Synaptura melanoptera and *ciliata*, **spp. nn.**, GILCHRIST, t. c. pp. 13 & 14, Natal.
Aphoristia variegata, Gilchrist, figured by GILCHRIST, op. cit. ii, pl. xviii.
Cynoglossus, Han. Buch. On the Naso-pharyngeal communications, JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 209, fig.; *C. attenuatus* and *brachycephalus*, **spp. nn.**, GILCHRIST, t. c. pp. 11 & 12, Natal.

ZEIDÆ.

- Cyttosoma*, **g. n.**, for *C. boops*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 6, Cape of Good Hope, 120 faths.
Proantignonia longirostris, Kramb., and *caprossoides*, Cosm. (foss.), described and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, pp. 12 & 13, pl. ii, figg. 3-5.

LUVARIDÆ.

- Luvarus imperialis*, Raf. Recorded from Guernsey by A. COLLENETTE, Rep. Guernsey Soc. 1903, p. 235.

TRICHIURIDÆ.

- Xenogramma*, **g. n.**, near *Gempylus*, for *X. carinatum*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 157, pl. xix, fig. 1, Lord Howe Id.

SCOMBRIDÆ.

- Scomber colias*, Gm., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2.
Chenogaster, **g. n.**, near *Gastrochisma* and *Lepidothynnus*, for *C. holmbergi*, **sp. n.**, LAHILLE, An. Mus. Buenos Aires (3) ii, 1903, p. 375, Montevideo.
Sphyrænodus pictus, Ag. (foss.). On a fragment from the Middle Eocene of Hungary : A. KOCH, Foldtani Kozl. xxxiv, pp. 332 & 365.

CARANGIDÆ.

- Trachurus japonicus*, Temm. & Schleg., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2.
Carangus hippoides, p. 443, fig., *rhabdotus*, p. 444, fig., and *politus*, p. 445, fig., **spp. nn.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, Honolulu ; *C. cheilio*, **sp. n.**, SNYDER, t. c. p. 524, pl. viii, fig. 14, Honolulu.
Carangoides ajax, **sp. n.**, SNYDER, t. c. p. 524, pl. viii, fig. 15, Honolulu.
Caranx primevus, **sp. n.** (foss.), EASTMAN, Bull. Mus. Harvard xlv, p. 28, fig., pl. i, fig. 4, Eocene of Monte Bolca ; *C. petrodavæ*, **sp. n.** (foss.), SIMIONESCU, Verh. geol. Reichsanst. 1904, p. 148, and Publ. Adamachi Ac. Romana, No. xii, p. 8, pl. ii, fig. 6, Eocene of Roumania.
Hemicaranx zelotes, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xii, fig. 22.
Liognathus obscura, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 74 Guam Id.
Oligoplites altus, Gthr., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xi, fig. 20 ; *O. refulgens*, **sp. n.**, iid. ibid. p. 73, pl. xi, fig. 19, Panama.

- Decapterus muroatsi*, Temm. & Schleg., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2; *D. canonoides*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 442, pl. iv, Honolulu.
Seriola sparna, **sp. n.**, O. P. JENKINS, t. c. p. 442, fig., Honolulu.
Peprilus snyderi, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 87, pl. xii, fig. 23, Panama.

SCARIDÆ.

- Scarus cretensis*, C. & V., redescribed by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 3; *S. cypho*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 95, Guam Id.
Pseudoscarus platodoni, **sp. n.**, SEALE, t. c. p. 96, Guam Id.
Scaridea, **g. n.**, near *Scarichthys*, Blkr., O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 468; *S. zonarcha*, p. 468, fig., and *batia*, p. 469, fig., **spp. nn.**, id. *ibid.*, Honolulu.

LABRIDÆ.

- Crenilabrus steinegeri*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 13, pl. vi, fig. 2, Japan.
Cirrhilabrus lyukyuensis, **sp. n.**, ISHIKAWA, t. c. p. 12, pl. vi, fig. 1, Japan; *C. jordani*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 529, pl. x, fig. 18, Hawaiian Ids.
Chilinus nigropinnatus, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 86, Guam Id.
Halichoeres nigropunctatus, **sp. n.**, SEALE, t. c. p. 89, Guam Id.; *H. macgregori*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 145, pl. xxiii, fig. 45, Panama.
Symphodus szajnochæ, Zigno (foss.), described and figured by EASTMAN, Bull. Mus. Harvard xlv, p. 29, pl. i, fig. 5.
Thalassoma berendti, **sp. n.**, SEALE, t. c. No. 4, p. 15, fig., Honolulu.
Calotomus cyclurus, p. 465, fig., and *snyderi*, p. 467, fig., **spp. nn.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, Honolulu.
Hemipteronotus jenkinsi, **sp. n.**, SNYDER, t. c. p. 530, pl. x, fig. 19, Hawaiian Ids.
Novaculichthys tattoo, **sp. n.**, SEALE, t. c. No. 4, p. 5, fig., Honolulu.
Julis turcica, Risso, redescribed by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 2; *J. duperreyi*, Q. & G., redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 463; *J. musume*, **sp. n.**, JORDAN & SNYDER, Smithson. Collect. i, p. 236, pl. lxi, Japan; *J. punctatus*, **sp. n.**, SEALE, t. c. p. 91, Guam Id.
Pseudojulis cerasina, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 528, Honolulu.
Stethojulis fulvoventris, **sp. n.**, SEALE, t. c. p. 92, Guam Id.
Gomphosus pacificus, **sp. n.**, SEALE, t. c. p. 94, Guam Id.

POMACENTRIDÆ.

- Chromis atrilobatus*, Gill, figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxi, fig. 43; *C. elaphrus*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 457, fig., Honolulu.
Amphiprion snyderi, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 11, pl. v, Japan.

- Pomacentrus gilli*, **sp. n.**, GILBERT & STARKS, t. c. p. 141, pl. xxii, fig. 44, Panama.
Glyphidodon polyacanthus, Ogilby, figured by WAITE, Rec. Austral. Mus. v, pl. xxiii, fig. 1.
Parma polylepis, Gthr., noticed and figured by WAITE, t. c. p. 169, pl. xxii.

CICHLIDÆ.

Monographed by PELLEGRIN, Mem. Soc. zool. France xvi, pp. 41-402, figg., pls. iv-vii.

- Heros tetracanthus*, C. & V., figured by EIGENMANN, Bull. U. S. Fish Comm. f. 1902, p. 231, figg.; *H. tetracanthus terralbasi*, *griseus*, and *cinctus*, subsp. nn., id. ibid. pp. 230-234, figg., Cuba; *H. nigricans*, **sp. n.**, id. ibid. p. 235, fig., Cuba; *H. (Cichlosoma) octofasciatus*, Reg., redescribed by REGAN, Ann. Nat. Hist. (7) xiii, p. 258; *H. callolepis*, **sp. n.**, id. ibid. p. 258, S. Domingo de Guzman, Mexico.
Cichlasoma hendricki, p. 208, fig., *evermanni*, p. 214, fig., and *majarra*, p. 217, fig., **spp. nn.**, S. E. MEEK, Field Mus. Zool. v, Mexico; *C. eigenmanni*, Meek, figured by S. E. MEEK, t. c. pl. xvi; *C. spinosissimum*, Vaill. & Pellegr., var. n., *immaculata*, PELLEGRIN, Mem. Soc. zool. France xvi, p. 225, Guatemala; *C. guentheri*, n. n. for *Heros oblongus*, Gthr., nec Casteln., id. ibid. p. 215.
Thorichthys, **g. n.**, near *Cichlasoma*, S. E. MEEK, t. c. p. 222; *T. ellioti*, **sp. n.**, id. ibid. p. 223, fig., Mexico.
Astatheros, **subg. n.**, for *Heros heterodontus*, Vaill. & Pellegr., PELLEGRIN, t. c. p. 203.
Heterotilapia, **g. n.**, for *Heros multispinosus*, Gthr., PELLEGRIN, t. c. p. 247.
Acara geayi, Pellegr., figured by PELLEGRIN, t. c. pl. iv, fig. 3.
Astronotus ocellatus, Ag., var. n. *zebra*, PELLEGRIN, t. c. p. 147, Santarem, Brazil.
Geophagus camopiensis, Pellegr., figured by PELLEGRIN, t. c. pl. iv, fig. 1.
Lamprologus mocquardi, Pellegr., figured by PELLEGRIN, t. c. p. 291, fig.
Lepidiolamprologus, **g. n.**, for *Lamprologus elongatus*, Blgr., PELLEGRIN, t. c. p. 295.
Symphysodon discus, Heck., var. n. *æquifasciata*, PELLEGRIN, t. c. p. 250, Brazil.
Pterophyllum altum, Pellegr., figured by PELLEGRIN, t. c. pl. iv, fig. 4.
Pelmatochromis nigrofasciatus, Pellegr., figured by PELLEGRIN, t. c. pl. vi, fig. 2.
Paratilapia dorsalis, Pellegr., figured by PELLEGRIN, t. c. pl. v, fig. 4; *P. prognathus* and *victoriana*, **spp. nn.**, id. Bull. Soc. zool. France xxix, p. 185, L. Victoria.
Nanochromis, **n. n.** for *Pseudoplesiops*, Blgr. nec Blkr., PELLEGRIN, Mem. Soc. zool. France xvi, p. 273; *N. dimidiatus*, Pellegr., figured, id. ibid. pl. iv, fig. 2.
Tilapia boulengeri, Pellegr., pl. v, fig. 3, *crassa*, Pellegr., p. 325, fig., *bilineata*, Pellegr., pl. v, fig. 1, and *giardi*, Pellegr., pl. v, fig. 2, figured by PELLEGRIN, t. c.; *T. guarti*, **sp. n.**, PELLEGRIN, Bull. Soc. zool. France xxix, p. 186, L. Victoria; *T. kottæ* and *dubia*, **spp. nn.**, LÖNNBERG, Ann. Nat. Hist. (7) xiii, pp. 135 & 137, Lake Barombikakotta, Cameroon Mountain.
Ophthalmotilapia, **g. n.**, for *Tilapia boops*, Blgr., and allies, PELLEGRIN, Mem. Soc. zool. France xvi, p. 345.
Boulengerochromis, **g. n.**, for *Tilapia microlepis*, Blgr., PELLEGRIN, t. c. p. 304.

- Astatotilapia*, **g. n.**, for *Tilapia desfontainesi*, Lacep., and allies, PELLEGRIN, t. c. p. 299.
- Astatoreochromis*, **g. n.**, between *Astatotilapia* and *Oreochromis*, PELLEGRIN, t. c. p. 384; *A. alluaudi*, **sp. n.**, id. ibid. p. 385, L. Victoria.
- Crenicichla geayi*, pl. vi, fig. 4, *vaillanti*, Pellegr., p. 376, and *multispinosa*, pl. vi, fig. 3, figured by PELLEGRIN, t. c.; *C. saxatilis*, var. n., *albo-punctata*, id. ibid. p. 374, Guianas; *C. brasiliensis*, Bl., varr. nn., *fasciata* and *marmorata*, id. ibid. p. 383, figg., Brazil.

OSPHROMENIDÆ.

- Osphromenus malayanus*, **sp. n.**, DUNCKER, Mt. Ges. Hamburg xxi, p. 163, pl. i, fig. 8, Kuala Lumpur, Malay Peninsula.
- Betta pugnax*, Cantor, figured, with notes on the breeding habits, by WAITE, Rec. Austral. Mus. v, p. 293, pl. xxxviii.

TEUTHIDIDÆ.

- Note on the limb girdles of *Teuthis oramin* by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 217, fig.

ACANTHURIDÆ.

- Acanthurus incipiens*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 480, fig., Honolulu.
- Teuthis leucopareius*, p. 476, fig., and *guentheri*, p. 477, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu.
- Prionurus*, Lacep. Remarks on the validity of this name: GILL, P. U. S. Mus. xxviii, p. 121.
- Xesurus hopkinsi*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 155, pl. xxv, Panama.
- Callicanthus metoposophron*, **sp. n.**, O. P. JENKINS, t. c. p. 481, fig., Honolulu.
- Zabrasoma agana*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 110, Guam Id.
- Monoceros garretti*, **sp. n.**, SEALE, t. c. p. 112, Guam Id.
- Pygæus*, Ag. (foss.) is regarded by Jordan as a generalized type allied to the *Acronuridæ*, for which he proposes a new family *Pygæidæ*, EASTMAN, Science (2) xx, p. 245; *P. agassizii*, **sp. n.** (foss.), EASTMAN, Bull. Mus. Harvard xlv, p. 31, pl. ii, Eocene of Monte Bolca.

CHÆTODONTIDÆ.

- Scatophagus argus*, Gm. Young noticed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 220, pl. i, fig. 1.
- Chaetodon nigrirostris*, Gill, figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxiv; *C. dixonii*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 276, fig., New Hebrides; *C. corallicola*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 531, pl. xi, fig. 20, Hawaiian Id.
- Holacanthus fisheri*, **sp. n.**, SNYDER, t. c. p. 532, pl. xi, fig. 21, Hawaiian Ids.; *H. marianas* and *bishopi*, **spp. nn.**, SEALE, Pap. B. P. Bishop Mus. i, pp. 104 & 106, Guam Id.
- Platax vesperilio*, L., mimicking a dead leaf: WILLEY, Spolia Zeylan. ii, p. 51, fig.

MULLIDÆ.

- Upeneus saffordi*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 72, Guam Id.
Pseudupeneus porphyreus, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm.
 xxii, p. 454, fig., Honolulu.

SPARIDÆ.

- Heterognathodon dæderleini*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 10,
 pl. iv, Japan.

PRISTIPOMATIDÆ.

- Pomadasys starri*, p. 200, pl. xiii, and *templei*, p. 201, pl. xiv, **spp. nn.**,
 S. E. MEEK, Field Mus. Zool. v, Mexico.
Erythrichthys leucogrammicus, Blkr. Young described and figured by
 JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 221, pl. i,
 fig. 6.

HAPLODACTYLIDÆ.

- Haplodactylus etheridgii*, Ogilby, figured by WAITE, Rec. Austral. Mus. v,
 pl. xxi.

GERRIDÆ.

- Eucinostomus meeki*, **sp. n.**, EIGENMANN, Bull. U. S. Fish Comm. f. 1902,
 p. 229, fig., Cuba.

SCIENIDÆ.

- Sagenichthys mordax*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 121,
 pl. xvi, fig. 32, Panama.
Larimus effulgens, Gilb., and *acclivis*, Jord. & Brist., figured by GILBERT &
 STARKS, t. c. pl. xvi, figg. 33 & 34.
Odontoscion xanthops, Gilb., figured by GILBERT & STARKS, t. c. pl. xvii,
 fig. 35.
Stellifer illecebrosus, Gilb., and *zestocarus*, Gilb., figured by GILBERT &
 STARKS, t. c. pl. xviii, figg. 36 & 37.
Ophioscion simulus, Gilb., and *scierus*, J. & G., figured by GILBERT &
 STARKS, t. c. pl. xix, figg. 38 & 39.
Polyclenus goodei, Gilb., figured by GILBERT & STARKS, t. c. pl. xx, fig. 40.
Paralonchurus petersi, Bocourt, figured by GILBERT & STARKS, t. c. pl. xx,
 fig. 41.
Eques viola, Gilb., figured by GILBERT & STARKS, t. c. pl. xxi, fig. 42.

HOPLOGNATHIDÆ.

- Hoplognathus insignis*, Kner. Note by PELLEGRIN, Bull. Soc. zool. France
 xxix, p. 120.

PSEUDOCHROMIDIDÆ.

- Cichlops*, M. & T., is superseded by *Labracinus*, Schleg., GILL, P. U. S.
 Mus. xxviii, p. 119.
Lopholatilus chamaeleonticeps, Goode. On its osteology and relationship:
 F. A. LUCAS, Bull. Bur. Fisher. xxiv, p. 81, figg.
Rathbunella alleni, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 267,
 pl. xxviii, Monterey Bay, California.

- Opisthognathus jacksoniensis*, Macleay, redescribed and figured by WAITE, Rec. Austral. Mus. v, p. 240, pl. xxvi, fig. 2.
Pseudopercis, **g. n.**, near *Pinguipes*, for *P. numida*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 41, Coast of Brazil.

SERRANIDÆ.

- Morone labrax*, L. On cases of malformation: ALBA FASCILOLO, Atti Soc. Ligustica xv, p. 92, pl. iii.
Epinephelus alexandrinus, C. & V. On a specimen from the Adriatic: FILIPPO TROIS, Atti Ist. Veneto lxiii, p. 93. *E. quernus*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, No. 4, p. 1, fig., Honolulu. Redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 449.
Serranus brighami, Seale, redescribed and referred to *Apsilus* by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 452; *S. brighami*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, No. 4, p. 7, fig., Honolulu; *S. kysnaensis*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 2, Cape of Good Hope.
Anthias duplidentatus, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 26, Coast of Brazil.
Rhegma thaumasium, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xv, fig. 31.
Priacanthus meeki, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 450, fig., Honolulu.
Lates pliocenius, **sp. n.** (foss.), A. KOCH, Ann. Mus. Hungar. ii, pp. 17 & 52, pl. vi, Pliocene of Szerem, Hungary.
Centropomus argenteus, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 260, Barbadoes and British Guiana.
Scombrops chilodipteroides, Blkr., described and figured by OTAKI, FUGITA & HIGURASHI, Fishes of Japan i, pt. 2.
Apogon queketti, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xiv; *A. evermanni*, **sp. n.**, JORDAN & SNYDER, P. U. S. Mus. xxviii, p. 123, Honolulu; *A. menesemus*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 448, fig., Honolulu; *A. erythrinus*, **sp. n.**, SNYDER, t. c. p. 526, pl. ix, fig. 17, Honolulu.
Fowleria brachygrammus, **sp. n.**, O. P. JENKINS, t. c. p. 447, fig., Honolulu.
Ariomma, **g. n.**, near *Apogon*, JORDAN & SNYDER, op. cit. xxvii, p. 942; *A. lurida*, **sp. n.**, iid. ibid. p. 943, Honolulu.
Howella brodiei, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 157, pl. xviii, fig. 4.
Lutianus jordani, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xiv, fig. 29.
Orthopristis brevipinnis, Sldr., figured by GILBERT & STARKS, t. c. pl. xv, fig. 30.
Eteliscus marshi, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 452, fig., Honolulu.
Chilodactylus vittatus, Garrett, redescribed by O. P. JENKINS, t. c. p. 489.
Cirrhitodea, **g. n.**, allied to *Oxyrrhites*, Blkr., for *C. bimacula*, **sp. n.**, O. P. JENKINS, t. c. p. 489, fig., Honolulu.
Histioporus spinifer, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 3, Mossel Bay, S. Africa.
Smerdis macrurus, Ag. (foss.). On a specimen from the Miocene of Hungary, A. KOCH, Foldtani Kozl. xxxiv, pp. 333 & 367.
Krambergeria, **g. n.**, near *Palimphytes*, Wettst., for *K. lanceolata*, **sp. n.** (foss.), SIMIONESCU, Verh. geol. Reichsanst. 1904, p. 148, and Publ. Adamachi Ac. Romana, No. xii, p. 10, pl. i, fig. 9, Oligocene of Roumania.

NANDIDÆ.

Mesonanta surinamensis, Sauv. = *Polycentrus schomburgki*, M. & T., PELLEGRIN, Mem. Soc. zool. France xvi, p. 221.

LOBOTIDÆ.

Lobotes pacificus, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xiv, fig. 28.

CENTRARCHIDÆ.

R. E. RICHARDSON, Bull. Illinois Lab. vii, pp. 27-35, figg., reviews the species of the genera *Apomotis*, *Lepomis* and *Eupomotis*.

Centrarchus occidentalis, Meek, figured by S. E. MEEK, Field Mus. Zool. v, pl. xii.

Micropterus dolomieu, Lacep. Notes on the nesting habits: D. LYDELL, Bull. U. S. Fish Comm. xxii, p. 39.

Pomotis sparoides, Lacep., figured by T. LARGE, Rep. Fish Comm. Illinois 1900-02, pl. —.

Kuhlia marginata, C. & V. Noticed from Japan and figured by ISHIKAWA, P. Tokyo Mus. i, p. 9, pl. iii, fig. 1.

BERYCIDÆ.

On the osteology of the principal types: E. C. STARKS, P. U. S. Mus. xxvii, pp. 601-619, figg.

On the specimens in the collection of the Philadelphia Academy: H. W. FOWLER, P. Ac. Philad. lvi, pp. 222-238.

Beryx decadactylus, C. & V., redescribed by ARIOLA, Ann. Mus. Genova (3) i, p. 163.

Trachichthodes spinosus, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xiii, fig. 1.

Plectromus macrophthalmus, Gilchrist, figured by GILCHRIST, t. c. pl. xiii, fig. 2.

Myripristis murdjan, Forsk., redescribed by H. W. FOWLER, P. Ac. Philad. lvi, p. 222; *M. sealei*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 439, fig., Honolulu.

Holocentrum osculum, Poey, redescribed by REGAN, Ann. Nat. Hist. (7) xiii, p. 259; *H. siccifer*, Cope, redescribed and figured by H. W. FOWLER, t. c. p. 233, fig.; *H. gladiispinis*, p. 222, fig., Tahiti, *gracilispinis*, p. 228, fig., Honolulu, *polynesia*, p. 229, fig., Thornton Is., and *thorntonensis*, p. 231, fig., Thornton Is., **spp. nn.**, id. *ibid.*

Sargocentron, **subg. n.** for *Holocentrum leo*, Cuv., H. W. FOWLER, t. c. p. 235.

Flammeo chromopterus, **sp. n.**, H. W. FOWLER, t. c. p. 236, fig., Samoa.

Bradyrurus, **g. n.** (Berycid. ?) for *Symphodus szajnochæ*, Zigno (foss.), GILL, Science (2) xx, p. 846.

ANACANTHINI.

GADIDÆ.

J. S. THOMSON, J. Mar. Biol. Ass. (2) vii, pp. 1-109, pls. i-viii, has investigated the periodic growth of scales in the principal British species, and regards the scales as giving a direct index of age in these fishes.

- Gadus pannonicus*, **sp. n.** (foss.), A. KOCH, Ann. Mus. Hungar. ii, pp. 4 & 37, pls. i, ii, iv, Pliocene of Szerem, Hungary.
- Holargyreus affinis*, **sp. n.**, COLLETT, Forh. Selsk. Christian. 1904, No. 9, p. 6, Farøe Channel, 375-600 fath.
- Læmonemodes compressicauda*, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xvi.
- Urophycis mystaceus* and *latus*, **spp. nn.**, MIRANDA RIBEIRA, A Lavoura, 1904, pp. 46 & 48, Coast of Brazil.
- Motella megalocynodon*, Kolomb., redescribed by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 1.
- Eretmophorus kleinenbergi*, Gigl. Note by ARIOLA, Ann. Mus. Genova (3) i, p. 159.

MACRURIDÆ.

Synopsis of the genera by DOLLO, Rés. Voy. Belgica, Poiss., p. 38.

On the Japanese species: JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, pp. 600-627.

- Gadomus colletti*, **sp. n.**, JORDAN & STARKS, t. c. p. 603, fig., Japan.
- Regania*, **g. n.**, near *Gadomus*, JORDAN & STARKS, t. c. p. 604; *R. nipponica*, **sp. n.**, iid. ibid. p. 605, fig., Japan.
- Melanobranchus antrodes*, **sp. n.**, JORDAN & STARKS, t. c. p. 606, pl. iv, fig. 1, Japan.
- Coryphænoides awae*, p. 608, fig., *garmani*, p. 610, fig., and *misakius*, p. 611, fig., **spp. nn.**, JORDAN & STARKS, t. c., Japan.
- Hymenocephalus striatissimus*, p. 612, fig., *papyraceus*, p. 614, fig., and *lethonemus*, p. 615, fig., **spp. nn.**, JORDAN & STARKS, t. c., Japan.
- Coelorhynchus anatrostris*, **sp. n.**, JORDAN & STARKS, t. c. p. 619, fig., Japan.
- Nezumia*, **g. n.**, near *Macrurus*, for *N. condylura*, **sp. n.**, JORDAN & STARKS, t. c. p. 620, pl. iv, fig. 2, Japan.
- Nematonurus lecointei*, Dollo, described and figured by DOLLO, t. c. p. 44, pl. vii.

PERCESOCES.

STROMATEIDÆ.

- Stromatioides nozawa*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 8, Japan.
- Platystethus cultratum*, Gthr., noticed and figured by WAITE, Rec. Austral. Mus. v, p. 161, pl. xix, fig. 2.
- Schedophilus maculatus*, Gthr., figured by WAITE, t. c. pl. xx, fig. 1; *S. heathii*, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 260, pl. xxvi, California.

SPHYRÆNIDÆ.

- Sphyræna picudilla*, Poey, diagnosed and figured by H. W. FOWLER, P. Ac. Philad. lv, p. 750, pl. xlvi; *S. ensis*, J. & G., and *borealis*, De Kay, notes by id. t. c. p. 750; *S. tome*, **sp. n.**, id. ibid. p. 750, pl. xlvi, Brazil (?); *S. idiastes*, **sp. n.**, HELLER & SNODGRASS, P. Washington Ac. v, p. 190, pl. ii, Galapagos Archipelago.
- Agriosphyræna*, **subg. n.**, for *Sphyræna snodgrassi*, Jenk., and *barracuda*, Walb., H. W. FOWLER, t. c. p. 749.
- Sphyrænodus hexagonalis*, **sp. n.** (foss.), A. KOCH, Ann. Mus. Hungar. ii, pp. 10 & 44, pls. iv-vi, Pliocene of Szerem, Hungary.

MUGILIDÆ.

- Mugil*, Art. On the habits of the Grey Mulletts in the Arcachon basin: KUNSTLER, C.R. Soc. Biol. lvi, p. 427; *M. dobula*, Gthr. Figured, with an account of the habits, by DANNEVIG, Rep. Fisher. N. S. W. f. 1902, ii, p. 26, pl. iii (1903); *M. brasiliensis*, Spix, and *kelaartii*, Gthr., Notes by H. W. FOWLER, P. Ac. Philad. lv, p. 743; *M. cephalus*, L., and *curema*, C. & V., Young figured, id. ibid. p. 744, figg.; *M. incilis*, Hancock, redescribed and figured, id. ibid. p. 744, pl. xlv.
- Liza caldwelli*, Fowl., note by H. W. FOWLER, t. c. p. 747; *L. alosoides*, **sp. n.**, id. ibid. p. 746, pl. xlv, Gaboon.
- Oedalechilus*, **subg. n.**, for *Agonostoma monticola*, Griff., H. W. FOWLER, t. c. p. 748.

ATHERINIDÆ.

- Atherina*, Art. On the European species: CLEMENTINA BORSIERI, Ann. di Agricolt. Rome, 1902 [1904], 92 pp. The five species: *A. presbyter*, C. & V., *hepsetus*, L., *boyeri*, Risso, *mochon*, C. & V., and *rissoi*, C. & V., figured, pls. vi-x. *A. insularum*, Jord. & Everm., redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 437. *A. lacustris*, Bp., redescribed by H. W. FOWLER, P. Ac. Philad. lv, p. 727. *A. sardinella*, **sp. n.**, id. ibid. p. 729, pl. xli, Italy. *A. evermanni*, **sp. n.**, EIGENMANN, Bull. U. S. Fish Comm. f. 1902, p. 228, fig., Cuba.
- Atherinomorus*, **subg. n.** for *Atherina laticeps*, Poey, H. W. FOWLER, P. Ac. Philad. p. 730.
- Ischnomembras*, **g. n.**, near *Atherina*, H. W. FOWLER, t. c. p. 730; *I. gabunensis*, **sp. n.**, id. ibid. p. 731, pl. xlii, Gaboon.
- Atherinella panamensis*, Stdr., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. ix, fig. 17.
- Phoxargyreus*, **g. n.**, near *Menida*, for *P. dayi*, **sp. n.**, H. W. FOWLER, P. Ac. Philad. p. 732, India.
- Basilichthys regia*, Humb. & Val., redescribed by H. W. FOWLER, t. c. p. 734.
- Thyrina guatemalensis*, Gthr., redescribed and figured by H. W. FOWLER, t. c. p. 736, pl. xliii.
- Protistius semotilus*, Cope, redescribed and figured by H. W. FOWLER, t. c. p. 737, pl. xlv.
- Gasteropterus archæus*, Cope, redescribed and figured by H. W. FOWLER, t. c. p. 738, pl. xliii.
- Atherinopsis californiensis*, Gir., redescribed by H. W. FOWLER, t. c. p. 739; *A. magdaleneæ*, **sp. n.**, id. ibid. p. 740, pl. xlii, Lower California.
- Tropidostethus rhotophilus*, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 234, pl. xxv, fig. 2.
- Chirostoma mezquital*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 170, fig., Durango, Mexico.

AMMODYTIDÆ.

Remarks by GILL, P. U. S. Mus. xxviii, p. 159, figg.

SCOMBRESOCIDÆ.

- Hemirhamphus fluviatilis*, Blkr. Note on the anal fin of the male: DUNCKER, Mt. Mus. Hamburg xxi, p. 170, fig. *H. saltator*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 53, pl. ix, fig. 16, Panama.
- Cypsilurus simus*, C. & V., redescribed by O. P. JENKINS, Bull. U. S. Fish

Comm. xxii, p. 435; *C. atrisignis*, **sp. n.**, id. *ibid.* p. 436, pl. iii, Honolulu.

Exonantes gilberti, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 522, pl. vii, fig. 13, Hawaiian Ids.

CATOSTEOMI.

Syngnathus incompletus, Cosm. (foss.), described and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, p. 6, pl. i, fig. 1. *S. cosmovicti*, **sp. n.** (foss.), id., Verh. geol. Reichsanst. 1904, p. 148, Oligocene of Roumania.

Siphostoma brevicaudum, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 163, fig., Vera Cruz, Mexico.

Dorichthys boaja, Blkr., figured by DUNCKER, Mt. Mus. Hamburg xxi, pl. ii, fig. 9; *D. fluviatilis*, **sp. n.**, id. *ibid.* p. 188, pl. ii, fig. 10, Kuala Lumpur, Malay Peninsula.

Fistularia corneta, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 56, pl. x, fig. 18, Pacific Coast of C. America.

Macrorhamphosus scolopax, L., recorded from Florida by H. M. SMITH, Science (2) xix, p. 314.

Gastrosteus aculeatus, L. On its life in salt and fresh waters: BORCEA, Bull. Soc. zool. France xxix, p. 140.

Lampris immaculata, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 4, False Bay, S. Africa.

HETEROMI.

Furasfer dentatus, Cuv. On a larva: FULTON, Rep. Fish Board Scotland xxii, iii, p. 283, pl. xviii, fig. 3. *F. acus*, Brünn. Larva figured by Lo BIANCO, Pelag. Tiefseefisch. 'Maja,' pl. iv, fig. 9.

HAPLOMI.

On the characters of this Suborder and of its principal constituent families and subfamilies: E. C. STARKS, Biol. Bull. vii, pp. 254-262.

CYPRINODONTIDÆ.

F. C. CARLTON, Science (2) xix, p. 245, has made experiments on the colour changes of *Fundulus heteroclitus*, to show their relation to nervous influences. J. A. LONG, t. c. p. 248, has made similar experiments on blinded specimens of this fish.

On hybrids between *Fundulus heteroclitus* and *Menidia notata*: MOENKHAUS, Amer. J. Anat. iii, p. 29.

Haplochilus macrurus, p. 19, Angola, and *schoelleri*, p. 136, Egypt, **spp. nn.**, BOULENGER, Ann. Nat. Hist. (7) xiv; *H. chevalieri* and *decorsei*, **spp. nn.**, PELLEGRIN, Bull. Mus. Paris 1904, pp. 222 & 223, Congo.

Procatopus, **g. n.**, near *Haplochilus*, for *P. nototænia*, **sp. n.**, BOULENGER, t. c. p. 20, Cameroon.

Fundulus cubensis, **sp. n.**, EIGENMANN, Bull. U. S. Fish. Comm. f. 1902, p. 222, fig., Cuba.

Cynodonichthys, **g. n.**, near *Fundulus*, for *C. tenuis*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 101, fig., Oaxaca, Mexico.

Glaridichthys falcatus and *torralbasi*, **spp. nn.**, EIGENMANN, t. c. pp. 224 & 225, figg., Cuba.

- Girardinus caudimaculatus*, Hens. On a female assuming the male character of the anal fin: E. PHILIPPI, SB. Ges. naturf. Berlin 1904, p. 196. *G. garmani*, **sp. n.**, EIGENMANN, t. c. p. 226, fig., Cuba.
- Toxus*, **g. n.**, near *Glaridichthys* and *Girardinus*, for *T. riddlei*, **sp. n.**, EIGENMANN, t. c. p. 226, figg., Cuba.
- Heterandria cubensis*, **sp. n.**, EIGENMANN, t. c. p. 227, fig., Cuba.
- Zoogoneticus maculatus*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 257, Rio Santiago, Mexico.
- Characodon geddesi*, **sp. n.**, REGAN, t. c. p. 257, Lake Tezcoco, S. Mexico; *C. multiradiatus*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 119, Lerma, Mexico.
- Goodea luitpoldii*, Stdr., figured by S. E. MEEK, Field Mus. Zool. v, pl. i; *G. whitei* and *toweri*, **spp. nn.**, id. ibid. pp. 137 & 138, figg., Mexico.
- Skiffia lermæ*, Meek, figured by S. E. MEEK, t. c. pl. viii.
- Platyptæcilus maculatus*, Gthr., figured by S. E. MEEK, t. c. pl. ix; *P. variatus*, p. 146, pl. x, and *nelsoni*, p. 147, fig., **spp. nn.**, id. ibid., Mexico.
- Pœcilia latipunctata*, **sp. n.**, S. E. MEEK, t. c. p. 150, fig., Mexico.
- Xiphophorus julapæ*, Meek, figured by S. E. MEEK, t. c. pl. xi.
- Pseudoxiphophorus pauciradiatus*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 256, Orizaba, Mexico.
- Orestias*, Cuv. On united lower pharyngeal bones in this genus: PELLEGRIN, C.R. Ac. Sci. cxxxix, p. 682, figg. *O. tschudii*, Cast. Note by PELLEGRIN, Bull. Soc. zool. France xxix, p. 92. *O. agassizii*, C. & V., vars. nn., *inornata*, *typica*, *senechali*, *crequii*, id. ibid. pp. 93 & 94, L. Titicaca; *O. neveui*, **sp. n.**, id. ibid. p. 95, L. Titicaca.
- Gambusia fasciata*, p. 129, fig., Oaxaca, and *bonita*, p. 132, fig., Vera Cruz, **spp. nn.**, S. E. MEEK, Field Mus. Zool. v.
- Paragambusia*, **g. n.**, for *Gambusia nicaraguensis*, Gthr., S. E. MEEK, t. c. p. 133.

ALEPIDOSAURIDÆ.

- Alepidosaurus æsculapius*, Bean = *A. ferox*, Lowe, JORDAN & SNYDER, Smithson. Collect. i, p. 235.

SCOPELIDÆ.

- Scopelus*, Cuv., or *Myctophum*, Raf. Remarks on the disposition of the photophores, and synopsis of the subgenera and species, by BRAUER, Zool. Anz. xxviii, p. 377.
- Scopelus rissoi*, Cocco, and *crocodilus*, Risso, figured, by LO BIANCO, Pelag. Tiefseefisch. "Maja," pl. ii, figg. 2 & 3; *S. argenteus*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 15, Cape of Good Hope.
- Myctophum valdiviæ*, p. 398, fig., Atlantic and Indian Oceans, *splendidum*, p. 399, fig., Atlantic and Indian Oceans, *luetkeni*, p. 400, Indian Ocean, *microps*, p. 400, fig., Indian Ocean, *elucens*, p. 401, fig., Indian Ocean, *fulgens*, p. 402, fig., Indian Ocean, *procerum*, p. 402, fig., Agulhas Bank, *nigrescens*, p. 403, Indian Ocean, and *macropteron*, p. 404, fig., Indian Ocean, **spp. nn.**, BRAUER, t. c.
- Neoscopelus alcocki*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 580, pl. ii, figg. 1 & 2, Japan.
- Diaphus watasei*, **sp. n.**, JORDAN & STARKS, t. c. p. 580, fig., Japan.
- Notoscopelus ejectus*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 150, pl. xviii, fig. 2, Lord Howe Id.
- Dasy Scopelus naufragus*, **sp. n.**, WAITE, t. c. p. 154, pl. xviii, fig. 3, Lord Howe Id.

- Centrobranchus*, **g. n.**, close to *Rhinoscopelus*, Lützk., for *Rhinoscopelus coruscans*, Fowl., which is redescribed, H. W. FOWLER, P. Ac. Philad. lv, p. 754.
- Æthopora perspicillata*, Ogilby, redescribed and figured by WAITE, t. c. p. 149, pl. xviii, fig. 1.
- Chlorophthalmus punctatus*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 15, Cape of Good Hope, 154 fath.; *C. albatrossis*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 579, pl. i, fig. 1, Japan.
- Goodella hypozona*, Ogilby = *Trachinocephalus myops*, Forst., WAITE, t. c. p. 232, pl. xxv, fig. 1.
- Holosteus esocinus*, Ag. (foss.). Note by EASTMAN, Bull. Mus. Harvard xlvi, p. 28.

DALLIIDÆ.

On the osteology : STARKS, Zool. Jahrb. Syst. xxi, pp. 249-262, figg.

ESOCIDÆ.

Umbra, Kram. Notes on the habits by GILL, Smithson. Collect. i, p. 295, figg.

ENCHODONTIDÆ.

Ischyrrhiza antiqua, Leidy (foss.) = *Onchosaurus radicalis*, Gerv., EASTMAN, Amer. Natural. xxxviii, p. 298.

HAPLOCHITONIDÆ.

Prototroctes maræna, Gthr. Notes on its habits by D. G. STEAD, Rep. Fisher. N. S. W. f. 1902, ii, p. 34, figg. (1903).

GALAXIIDÆ.

Geographical list of the species by DOLLO, Rés. Voy. Belgica, Poiss. p. 150.

APODES.

- C. M. L. POPTA, Ann. Sci. nat. (8) xix, pp. 367-390, figg., has studied the differences in the branchial arches and their appendages in a large number of Apodal Fishes.
- O. RICCI, Atti Soc. Modena (4) iv, pp. 11-35, remarks on the researches on the metamorphoses of the Mediterranean Apodal Fishes.
- Muræna clepsydra*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. vii, fig. 13; *M. lampra* and *kauila*, **spp. nn.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, pp. 423 & 424, figg., Honolulu.
- Echidna vineta*, p. 429, fig., *obscura*, p. 430, fig., and *psalion*, p. 431, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu; *E. uniformis*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 62, Guam Id.
- Gymnothorax chalazius*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 145, pl. xvii, fig. 2, Lord Howe Id.; *G. leucostictus*, p. 425, fig., *gracili-cauda*, p. 426, fig., *thalassopterus*, p. 427, pl. ii, *leucacme*, p. 427, fig., *ercodes*, p. 428, fig., and *leihala*, p. 428, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu; *G. nuttingi*, p. 518, pl. iv, fig. 7, *berndti*, p. 518, pl. iv, fig. 8, *mucifer*, p. 519, pl. v, fig. 9, *xanthostomus*, p. 519, pl. v, fig. 10, and *waiahuæ*, p. 520, pl. vi, fig. 11, **spp. nn.**, SNYDER, Bull. U. S. Fish Comm. xxii, Hawaiian Ids.

- Uropterygius leucurus*, **sp. n.**, SNYDER, t. c. p. 521, pl. vi, fig. 12, Hawaiian Ids.
- Murænichthys nicholsæ*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 142, pl. xvii, fig. 1, Lord Howe Id.
- Moringua hawaiiensis*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 517, pl. iii, fig. 6, Hawaiian Ids.
- Gastrostomus pacificus*, **sp. n.**, B. A. BEAN, Smithson. Collect. i, p. 254, fig., Pacific Ocean, 5269 faths.
- Nemichthys avocetta*, J. & G., redescribed by GILBERT, P. Calif. Ac. Zool. (3) iii, p. 256.
- Conger vulgaris*, Cuv. On the larva and young: FULTON, Rep. Fish. Board Scotland xxii, iii, p. 281, pl. xviii, figg. 1 & 2. On a larva: EIGENMANN, Science (2) xix, p. 629, fig.
- Congrellus bowersi*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 422, fig., Honolulu.
- Veternio*, **g. n.**, near *Conger*, for *V. verrens*, **sp. n.**, SNYDER, t. c. p. 516, pl. ii, fig. 3, Honolulu.
- Anguilla vulgaris*, Turt., R. QUINTON, C.R. Ac. Sci. cxxxix, pp. 938-941, and C.R. Soc. Biol. lvii, p. 170, has made experiments on the changes taking place in Eels artificially transferred from fresh into salt water, and vice-versa. The larva, *Leptocephalus brevirostris*, figured by LO BIANCO, Pelag. Tiefseefisch. "Maja," pl. i. *A. vulgaris*, var. *kieneri*, Kaup. Note by ARIOLA, Ann. Mus. Genova (3) i, p. 156. *A. australis*, Rich. On a case of icterism: J. A. KERSHAW, Victorian Natural. xx, p. 140. *A. cæca*, **sp. n.**, H. M. SMITH, P. Soc. Washington xvii, p. 121, fig., Atlantic, 60 miles S. of Nomans Land.
- Sphagebranchus flavicaudus*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 516, pl. ii, fig. 4, Hawaiian Ids.
- Callechelys luteus*, **sp. n.**, SNYDER, t. c. p. 517, pl. iii, fig. 5, Hawaiian Ids.
- Brachysomophis henikawi*, **sp. n.**, JORDAN & SNYDER, P. U. S. Mus. xxvii, p. 940, Honolulu.
- Pisodonophis diaspilotus*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. vii, fig. 12.
- Microdonophis macgregori*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 422, fig., Hawaiian Ids.
- Eomyrus ventralis*, Ag. (foss.). Fragment noticed and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, p. 5, pl. i, fig. 3.

OSTARIOPHYSI.

LORICARIIDÆ.

Monographed by C. T. REGAN, Tr. Zool. Soc. London xvii, pp. 191-350, pls. ix-xxi.

- Plecostomus festæ*, Blgr., pl. ix, fig. 1, *cordovæ*, Gthr., pl. ix, fig. 3, *borellii*, Blgr., pl. ix, fig. 2, and *wuchereri*, Gthr., pl. x, fig. 2, figured by REGAN, t. c.; *P. latirostris*, p. 213, pl. xi, fig. 1, Matto Grosso and Goyaz, *garmani*, p. 214, pl. x, fig. 1, Rio dal Velhas, Brazil, and *pellegrini*, p. 218, Upper Amazon, **spp. nn.**, id. ibid.
- Ancistrus oligospilus*, Gthr., pl. xii, fig. 1, *platycephalus*, Blgr., pl. xii, fig. 4, and *setosus*, Blgr., pl. xii, fig. 2, figured by REGAN, t. c.; *A. annectens*, p. 225, pl. xi, fig. 2, N. W. Ecuador, and *guentheri*, p. 241, pl. xii, fig. 3, British Guiana, **spp. nn.**, id. ibid.
- Chæstostomus anomalus*, Regan, pl. xiii, fig. 2, and *microps*, Gthr., pl. xiv, fig. 3, figured by REGAN, t. c.; *C. maculatus*, p. 246, pl. xiv, fig. 4, High Peru, *marcapatæ*, p. 246, pl. xiv, fig. 1, E. Peru, *brevis*, p. 247, pl. xiii, fig. 3, E. Ecuador, *marginatus*, p. 249, pl. xiii, fig. 1, N. W.

- Ecuador, and *thomsoni*, p. 250, pl. xiv, fig. 2, Colombia, **spp. nn.**, id. *ibid.*
- Xenocara*, **g. n.**, near *Chaetostomus*, REGAN, t. c. p. 251; *X. latifrons*, Gthr., pl. xv, fig. 1, and *chagresi*, Eigenm., pl. xiv, fig. 7, figured, id. *ibid.*; *X. occidentalis*, p. 257, pl. xiv, fig. 5, E. Ecuador, *brevipinnis*, p. 257, Rio Grande do Sul, and *montana*, p. 258, pl. xiv, fig. 6, Andes of Bolivia, **spp. nn.**, id. *ibid.*
- Hypoptopoma guentheri*, Blgr., figured by REGAN, t. c. pl. xv, fig. 2.
- Otocinclus vittatus*, **sp. n.**, REGAN, t. c. p. 267, pl. xv, fig. 3, Matto Grosso.
- Loricaria jubata*, Blgr., pl. xv, fig. 5, and *latirostris*, Blgr., pl. xvi, fig. 1, figured by REGAN, t. c.; *L. nigricauda*, p. 275, pl. xv, fig. 2, Rio Janeiro, *steindachneri*, p. 281, E. Brazil, *microlepidogaster*, p. 283, pl. xv, fig. 4, Rio Grande do Sul, *punctata*, p. 285, pl. xvii, fig. 1, Amazon, *macrops*, p. 290, pl. xvii, fig. 3, R. La Plata, *simillima*, p. 292, pl. xvii, fig. 2, E. Ecuador, and *laticeps*, p. 295, pl. xx, fig. 1, Paraguay, **spp. nn.**, id. *ibid.*
- Oxyloricaria frenata*, Blgr., figured by REGAN, t. c. pl. xviii, fig. 2; *O. guentheri*, p. 299, pl. xviii, fig. 1, Upper Amazon, *robusta*, p. 300, pl. xix, fig. 1, Paraguay, and *lyra*, p. 300, pl. xix, fig. 2, R. Jurua, **spp. nn.**, id. *ibid.*
- Farlowella gladiolus*, Gthr., figured by REGAN, t. c. pl. xx, fig. 2; *F. gracilis*, **sp. n.**, id. *ibid.* p. 303, pl. xx, fig. 3, Cauca Valley, Colombia.
- Arges guentheri*, Blgr., pl. xxi, fig. 2, *orientalis*, Blgr., pl. xxi, fig. 4, *brachycephalus*, Gthr., pl. xxi, fig. 8, and *festæ*, Blgr., pl. xxi, fig. 7, figured by REGAN, t. c.; *A. homodon*, p. 309, pl. xxi, fig. 1, Andes of Colombia, *boulengeri*, p. 310, E. Ecuador, *eigenmanni*, p. 312, pl. xxi, fig. 3, Andes of Ecuador, *vaillanti*, p. 312, Andes of Ecuador, *chotæ*, p. 313, pl. xxi, fig. 5, N. Ecuador, *marmoratus*, p. 314, pl. xxi, fig. 6, Andes of Colombia, *fissidens*, p. 316, Andes of Ecuador, and *simonsii*, p. 317, pl. xxi, fig. 9, Andes of Peru, **spp. nn.**, id. *ibid.*

SILURIDÆ.

- Clarias laeviceps*, Gill, redescribed by BOULENGER, P. Z. S. 1904, i, p. 200; *C. fuscus*, Lacep. Note by VAILLANT, Bull. Mus. Paris 1904, p. 298; *C. pulcher*, **sp. n.**, POPTA, Notes Leyden Mus. xxiv, p. 179, C. Borneo.
- Silurus mento*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 192, Yunnan.
- Silurichthys schneideri* and *indragiriensis*, **spp. nn.**, VOLZ, Rev. Suisse Zool. xii, pp. 463 & 464, Sumatra.
- Macrones pluriradiatus*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 462, pl. xxiii, fig. 2; *M. bimaculatus*, **sp. n.**, VOLZ, Rev. Suisse Zool. xii, p. 466, Sumatra; *M. howong*, p. 181, *bongan*, p. 182, *bo*, p. 183, *kajan*, p. 184, and *fortis*, p. 185, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, C. Borneo; *M. medianalis*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 194, Yunnan.
- Pseudobagrus ornatus*, **sp. n.**, DUNCKER, Mt. Mus. Hamburg xxi, p. 173, pl. ii, fig. 13, Muar R., Malay Peninsula.
- Liocassis fuscus*, **sp. n.**, POPTA, t. c. p. 186, C. Borneo.
- Neopangasius*, **g. n.**, near *Pseudopangasius*, Blkr., for *N. nieuwenhuisii*, **sp. n.**, POPTA, t. c. p. 180, C. Borneo.
- Liobagrus reini*, Hilg., figured by ISHIKAWA, P. Tokyo Mus. i, pl. i; *L. nigricauda*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 193, Yunnan.
- Fajumia schweinfurthi*, **g.** and **sp. nn.** (foss.), STROMER, N. Jahrb. Min. 1904, i, p. 3, pl. 1, figg. 1 & 2, Middle Eocene of Egypt.
- Socnopæa grandis*, **g.** and **sp. nn.** (foss.), STROMER, t. c. p. 6, pl. 1, fig. 3, Middle Eocene of Egypt.

- Amiurus nebulosus*, Les. Notes on the breeding habits by H. M. SMITH & L. G. HARRON, Bull. U. S. Fish Comm. xxii, p. 151; *A. melas*, Raf., figured by T. LARGE, Rep. Fish Comm. Illin. 1900-02, pl. —; *A. australis*, p. 13, S. Vera Cruz, and *mexicanus*, R. Panuco, Mexico, **spp. nn.**, S. E. MEEK, Field Mus. Zool. v.
- Rhamdia oaxacæ*, Meek, figured by S. E. MEEK, t. c. pl. v.
- Amphilius atesuensis*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 17, Gold Coast.
- Acrochordonichthys obscurus*, p. 187, *buettikoferi*, p. 188, and *varius*, p. 189, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, C. Borneo.
- Arius bonneti*, **sp. n.** (foss.), PRIEM, Bull. Soc. geol. France (4) iv, p. 44, figg., Upper Bartonian of the Paris Basin.
- Netrema mazatlanæ*, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 255, pl. xxv, Mazatlan, Mexico.
- Galeichthys xenauchen*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. iv, fig. 8; *G. eigenmanni*, **sp. n.**, id. ibid. p. 21, pl. iv, fig. 7, Panama; *G. aguadulce*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 9, pl. iv, R. Papaloapam, Mexico.
- Tachysurus emmelane*, Gilb., figured by GILBERT & STARKS, t. c. pl. vi; *T. steindachneri*, p. 29, pl. v, fig. 9, and *evermanni*, p. 32, pl. v, fig. 10, **spp. nn.**, iid. ibid., Panama.
- Synodontis resupinatus*, **sp. n.**, BOULENGER, P. Z. S. 1904, i, p. 199, pl. viii, Upper Niger.
- Chiloglanis*, Peters. Synopsis of the species by BOULENGER, P. Z. S. 1903, ii, pp. 333; *C. modjensis*, **sp. n.**, id. ibid. p. 332, pl. xxxi, fig. 3, Modjo R., Gallaland; *C. cameronensis* and *batesii*, **spp. nn.**, id. Ann. Nat. Hist. (7) xiv, pp. 18 & 19, Cameroon.
- Bagarius nieuwenhuisii*, **sp. n.**, POPTA, Notes Leyden Mus. xxiv, p. 190, C. Borneo.
- Glyptosternum laak*, p. 190, and *tiong*, p. 191, **spp. nn.**, POPTA, t. c., C. Borneo.
- Pseudecheneis paviei*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 464, pl. xxiii, fig. 3.
- Callomystax schmidtii*, **sp. n.**, VOLZ, Rev. Suisse Zool. xii, p. 470, Sumatra.
- Trichomycterus dispar*, Tsch., and *rivulatus*, C. & V. Notes by PELLEGRIN, Bull. Soc. zool. France xxix, p. 91.

CYPRINIDÆ.

- J. REIGHARD, Science (2) xix, pp. 211 & 212, has made observations on the breeding habits of American Cyprinids, and on the function of the nuptial pearl-like warts of the males.
- On hybrids of German Cyprinids: E. LEONHARDT, Die Bastarde der Deutschen karpfenähnlichen Fische. Neudamm, 1904, 8vo, 58 pp., figg.
- Catostomus commersonii*, Lacep. On the breeding habits: CULBERTSON, P. Indiana Ac. 1903, p. 65. *C. tahoensis*, Gill & Jord., redescribed by RUTTER, Bull. U. S. Fish Comm. xxii, p. 147; *C. sonorensis*, Meek, and *conchos*, Meek, figured by S. E. MEEK, Field Mus. Zool. v, pls. vi & vii.
- Pantosteus lahonton*, **sp. n.**, RUTTER, t. c. p. 146, fig., N. E. California.
- Carpioides grayi*, Cope. Note by H. W. FOWLER, P. Ac. Philad. lvi, p. 242; *C. microstomus*, p. 27, fig., *elongatus*, p. 28, fig., and *labiosus*, p. 29, fig., **spp. nn.**, S. E. MEEK, t. c. Mexico.
- Moxostoma congestum*, B. & G. Note by H. W. FOWLER, t. c. p. 243.
- Dangila koedjem* and *rosea*, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, pp. 192 & 193, C. Borneo.

- Osteochilus jentinki*, p. 194, *vittatoides*, p. 195, *kelabau*, p. 196, *repang*, p. 196, and *bellus*, p. 197, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, C. Borneo.
- Labeo neumanni*, **sp. n.**, BOULENGER, P. Z. S. 1903, ii, p. 329, pl. xxix, Modjo and Wabbi Rivers, Gallaland; *L. chariensis*, **sp. n.**, PELLEGRIN, Bull. Mus. Paris 1904, p. 311, Shari R.
- Tylognathus kajaniensis* and *bo*, **spp. nn.**, POPTA, t. c. pp. 198 & 199, C. Borneo.
- Zezera hilgendorfi*, Ishikawa, described and figured by ISHIKAWA, P. Tokyo Mus. i, p. 3, pl. ii, fig. 1.
- Discognathus*, Heck. Synopsis of the African species by BOULENGER, P. Z. S. 1903, ii, p. 331; *D. blanfordii*, Blgr., figured, id. ibid. pl. xxxi, fig. 2; *D. makiensis*, **sp. n.**, id. ibid. p. 330, pl. xxxi, fig. 3, Maki R., L. Zwai.
- Crossochilus oblongus*, C. & V., var. n. *nigroloba*, POPTA, t. c., p. 200, C. Borneo; *C. pseudobagroides*, **sp. n.**, DUNCKER, Mt. Mus. Hamburg xxi, p. 176, pl. ii, fig. 12, Muar R., Malay Peninsula.
- Paracrossochilus*, **g. n.**, near *Crossochilus*, for *P. bicornis*, **sp. n.**, POPTA, t. c. p. 200, C. Borneo.
- Barbus maculatus*, C. & V. Note by DUNCKER, Mt. Mus. Hamburg xxi, p. 177. *B. proctozyrson*, Blkr., redescribed by VOLZ, Rev. Suisse Zool. xii, p. 477; *B. halei*, p. 178, pl. ii, fig. 15, *soroides*, p. 178, pl. i, fig. 7, *pahangensis*, p. 179, pl. i, fig. 4, and *lineatus*, p. 180, pl. ii, fig. 14, **spp. nn.**, DUNCKER, Mt. Mus. Hamburg xxi, Malay Peninsula; *B. grahami* and *yunnanensis*, **spp. nn.**, REGAN, Ann. Nat. Hist. (7) xiii, pp. 190 & 191, Yunnan; *B. linnellii*, **sp. n.**, LÖNNBERG, Ann. Nat. Hist. (7) xiii, p. 138, Elephant Lake, Cameroon Mountain; *B. erlangeri*, **sp. n.**, BOULENGER, P. Z. S. 1903, ii, p. 331, pl. xxx, Wabbi, Modjo, and Iraro Rivers, Gallaland; *B. micronema*, p. 237, Cameroon, *nummifer*, p. 449, L. Victoria, *macropristis*, p. 449, L. Victoria, and *doggetti*, p. 450, L. Victoria, **spp. nn.**, id. Ann. Nat. Hist. (7) xiii; *B. ansorgii*, p. 16, Angola, *walkerii*, p. 16, Gold Coast, *eutenia*, p. 218, Angola, and *holotenia*, p. 218, Cameroon to Congo, **spp. nn.**, id. op. cit. xiv.
- Luciocyprius*, **g. n.**, near *Barbus* and *Gobio*, for *L. lang-soni*, **sp. n.**, VAILLANT, Bull. Mus. Paris 1904, p. 299, Upper Tonkin.
- Oreinus grahami*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiv, p. 416, Yunnan.
- Acanthogobio paitschewskii* and *oxyrhynchus*, **spp. nn.**, NIKOLSKI, Annuaire Mus. St. Petersb. viii, 1903, pp. 356 and 358, L. Chanka, E. Asia.
- Hemibarbus joiteni*, **sp. n.**, JORDAN & STARKS, Smithson. Collect. i, p. 241, p. lxiv, Tientsin, China.
- Pimephales anuli*, **sp. n.**, KENDALL, Bull. U. S. Fish Comm. xxii, p. 360, fig., Maine.
- Chasmistes chamberlaini*, **sp. n.**, RUTTER, Bull. U. S. Fish Comm. xxii, p. 147, N.E. California.
- Agosia robusta*, **sp. n.**, RUTTER, t. c. p. 148, fig., N.E. California.
- Notropis chalybeus abbotti*, subsp. n., H. W. FOWLER, P. Ac. Philad. lvi, p. 239, pl. xvii, New Jersey; *N. nazas* and *forionensis*, **spp. nn.**, S. E. MEEK, Field Mus. Zool. v, p. 70, figg., Mexico.
- Paranotropis*, **subg. n.**, for *Notropis luciodus*, Cope, and, *N. pilsbryi*, **sp. n.**, H. W. FOWLER, t. c. p. 245, fig., White River Basin, Arkansas.
- Leuciscus erythrophthalmus*, L., and *L. aulæ*, Bp. On a hybrid: BELLOTTI, Atti Mus. Milano xliii, p. 1, pl. i. On a hybrid between *L. erythrophthalmus*, L., and *L. muticellus*, Bp., ROSETTA SEGRE, Boll. Mus. Torino xix, No. 472, p. 10; *L. dorobaë*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 6, pl. iii, fig. 2, Japan; *L. carletoni*, **sp. n.**, KENDALL, Bull. U. S. Fish Comm. xxii, p. 357, fig., Maine; *L. (Phaxinellus) chaignoni*, **sp. n.**, VAILLANT, Bull. Mus. Paris 1904, p. 188, Tunisia.

- Tinca vulgaris*, Cuv., var. n. *cestellæ*, ROSETTA SEGRE, Boll. Mus. Torino xix, No. 472, p. 2, Cadore, N.E. Italy.
- Rasbora vulgaris*, p. 181, *maculata*, p. 182, pl. i, fig. 6, *dorsiocellata*, p. 182, pl. i, fig. 2, and *heteromorpha*, p. 182, pl. i, fig. 5, **spp. nn.**, DUNCKER, Mt. Mus. Hamburg xxi, Malay Peninsula.
- Acanthorhodeus tonkinensis*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 465, pl. xxiii, fig. 4.
- Leucaspis delineatus*, Heck., redescribed (in Hungarian) and figured by G. VUTSKITS, Allatt. Kozl. Magyar Tars. ii, 1903, p. 169, pl. xv.
- Barilius polylepis*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 191, Yunnan; *B. andersoni*, **sp. n.**, id. op. cit. xiv, p. 416, Yunnan.
- Zacco mitsukurii*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 4, pl. ii, fig. 2, Japan.
- Neobola argentea*, **sp. n.**, PELLEGRIN, Bull. Soc. zool. France xxix, p. 184, L. Victoria.
- Chanodichthys affinis*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 467, pl. xxiii, fig. 5.
- Pelecus cultratus*, L. On its distribution in Germany: NEHRING, SB. Ges. naturf. Berlin 1904, p. 43.
- Hemiculter varpachovskii*, **sp. n.**, NIKOLSKI, Annuaire Mus. St. Petersb. viii, 1903, p. 359, L. Buir-Nor, E. Mongolia.
- Hemicultrella soldatovi*, **sp. n.**, NIKOLSKI, t. c. p. 361, E. Mongolia.
- Pseudolaubuca* (?) *clupeoides*, **sp. n.**, DUNCKER, Mt. Mus. Hamburg xxi, p. 183, pl. i, fig. 1, Kuala Lumpur, Malay Peninsula.
- Nemachilus pleurotaenia* and *nigromaculatus*, **spp. nn.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 192, Yunnan; *N. selangoricus*, **sp. n.**, DUNCKER, t. c. p. 175, Kuala Lumpur, Malay Peninsula.
- Orthrias*, Jord. On a specimen from Vancouver (imported?): JORDAN, Science (2) xix, p. 634.
- Ussuria*, **g. n.**, allied to *Lepidocephalichthys*, for *U. leptcephala*, **sp. n.**, NIKOLSKI, Annuaire Mus. St. Petersb. viii, 1903, p. 362, Ussuri R. and E. Mongolia.

CHARACINIDÆ.

- Alestes natalensis*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 155, near Durban.
- Hemigrammus compressus*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 87, fig., R. Papaloapam, Mexico.
- Eucynopotamus*, n. n. for *Evermannella*, Eigenm. nec Fowler, H. W. FOWLER, P. Ac. Philad. lvi, p. 119.
- Neoborus quadrilineatus*, **sp. n.**, PELLEGRIN, Bull. Mus. Paris 1904, p. 219, Casamanza R.
- Nannocharax dimidiatus*, **sp. n.**, PELLEGRIN, t. c. p. 220, Casamanza R.

MALACOPTERYGII.

W. G. RIDEWOOD, P. Z. S. 1904, ii, pp. 35-81, figg., gives detailed descriptions and figures of the skulls of the *Elopidæ* and *Albulidæ*, and remarks on the morphology of the skull in the lower Teleosteans generally. The same author deals in similar manner with the cranial osteology of the *Mormyridæ*, *Notopteridæ*, and *Hyodontidæ*, J. Linn. Soc. xxix, pp. 188-217, pls. xxii-xxv.

GONORHYNCHIDÆ.

Gonorhynchus greyi, Rich. Young described and figured by WAITE, Rec. Austral. Mus. v, p. 147, pl. xvii, fig. 3; *G. abbreviatus*, Schleg., figured by JORDAN & SNYDER, Smithson. Collect. i, pl. lix.

STOMIATIDÆ.

- Chauliodus sloanii*, Bl. Schn., figured by LO BIANCO, Pelag. Tiefseefisch. "Maja," pl. iii, fig. 6; *C. emmelas*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 579, pl. i, fig. 2, Japan.
- Cyclothone microdon*, Gthr., figured by LO BIANCO, t. c. pl. ii, fig. 4.
- Argyrolepeus hemigymnus*, Cocco. On a larval specimen: HOLT & BYRNE, Ann. Nat. Hist. (7) xiv, p. 38, fig.
- Polyipnus stereope*, **sp. n.**, JORDAN & STARKS, t. c. p. 581, pl. ii, fig. 3, Japan.

SALMONIDÆ.

- On the Japanese species: KITAHARA, Annot. zool. Japon. v, pp. 117-120.
- D. S. JORDAN, Amer. Natural. xxxviii, pp. 885-887, remarks on the present distribution of Californian Trout, natural and through human agency.
- Salmo salar*, L., and *S. trutta*, L. On specimens from the Tay and Tweed: CALDERWOOD, P. R. Soc. Edinb. xxv, p. 27, pl. —. *S. fontinalis*, Mitch. On albino specimens and their progeny: C. R. PETTIS, Science (2) xix, p. 867.
- Oncorhynchus quinnat*, Rich. On the habits: C. RUTTER, Bull. U. S. Fish Comm. xxii, p. 65, pls. x-xvi.
- Coregonus*, L. On the species found in Maine: KENDALL, Bull. U. S. Fish Comm. xxii, p. 363, figg. *C. stanleyi*, **sp. n.**, id. ibid. p. 366, fig., Maine; *C. macrophthalmus*, Nüssl., and *exiguus*, Klunz. Remarks by NÜSSLIN, Jahresh. Ver. Württemb. lx, p. 189, and KLUNZINGER, t. c. p. 335; *C. albula*, Art., var. n. Kiletz, MICHAÏLOVSKY, Annuaire Mus. St. Petersb. viii, 1903, p. 347, L. Onega; *C. fera*, var. *tscholmugensis*, Danil., redescribed, id. ibid. p. 352.

CLUPEIDÆ.

- G. ANTIPA, Anz. Ak. Wiss. 1904, pp. 299-303, has a preliminary report on the Clupeines of the Western Coast of the Black Sea and the mouth of the Danube.
- Clupea harengus*, L., A. GIARD, C.R. Soc. Biol. lvi, pp. 1058-1061, has further notes on the movements of the Herring on the Boulogne coast. Remarks by CLIGNY, op. cit. lvii, p. 347. *C. pilchardus*, L. On a specimen from the Moray Firth: FULTON, Rep. Fish. Board Scotland xxii, iii, p. 284. *C. sprattus*, L. On its fecundity: FULTON, t. c. p. 285. *C. sulina*, **sp. n.**, ANTIPA, t. c. p. 302, Black Sea; *C. (Opis-thonema) bulleri*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 255, Jalisco, Mexico.
- Alosa pontica*, Eichw., varr. nn. *negrescens*, *danubii*, and *russac*, ANTIPA, t. c. pp. 300 & 301, Black Sea; *A. nordmanni*, **sp. n.**, id. ibid. p. 301, Black Sea.
- Sardina dobrogica*, **sp. n.**, ANTIPA, t. c. p. 302, Black Sea.
- Dorosoma anale*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 93, fig., Mexico.
- Meletia crenata*, Heck. (foss.), redescribed and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, p. 4, pls. i & ii.
- Diplomystus marmorensis*, **sp. n.** (foss.), A. S. WOODWARD, Quart. J. Geol. Soc. lx, p. 284, pl. xxiv, fig. 28, Miocene of Sarkeni, Sea of Marmora.
- Copeichthys*, n. n. for *Diplomystus*, Cope, nec Blkr., DOLLO, Res. Voy. Belgica, Poiss. p. 159.
- Engraulis (Stolephorus) argentivittatus*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 255, Jalisco, Mexico.

- Anchovia rostralis*, Gilb. & Piers., and *spinifera*, C. & V., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. viii.
Lyrolepis caucasicus, g. and sp. nn. (foss.), ROMANOWKY, Verh. Russ. Min. Ges. (2) xlii, p. 1, figg., pl. i, Caucasus.

SAURODONTIDÆ.

- Portheus molossus*, Cope (foss.). On a complete skeleton: OSBORN, Bull. Amer. Mus. xx, p. 377, figg., pl. x.

OSTEOGLOSSIDÆ.

- Arapaima gigas*, Cuv., described, with notes on the habits, by A. R. FERREIRA, Arch. Mus. Rio Jan. xii, p. 155.

NOTOPTERIDÆ.

- On the cranial osteology and systematic position: RIDEWOOD, J. Linn. Soc. xxix, pp. 202-215, pl. xxiv.

HYODONTIDÆ.

- On the cranial osteology and systematic position: RIDEWOOD, J. Linn. Soc. xxix, pp. 206-215, pl. xxv.

MORMYRIDÆ.

- On the cranial osteology and systematic position: RIDEWOOD, J. Linn. Soc. xxix, pp. 188-214, pls. xxii & xxiii.

Marcusenius budgetti, sp. n., BOULENGER, P. Z. S. 1904, i, p. 197, pl. vii, fig. 1, Niger Delta.

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VI. TUNICATA.

BY

W. T. CALMAN, D.Sc.

CONTENTS.

	Page
I. TITLES	1
II. SUBJECT-INDEX.	
A. Anatomy, Physiology, &c.	3
B. Embryology	4
C. Distribution	4
1. Geographical	4
2. Geological [Vacant]	
III. SYSTEMATIC INDEX	4

I. TITLES.

1. ANON. Bull. internat. expl. Mer. Année 1903-1904, No. 3, Partie D. Plankton, pp. 115-146. [Tables.]
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II. SUBJECT-INDEX.

A. ANATOMY, PHYSIOLOGY and GENERAL.

General account of Tunicata; HERDMAN (13): general account continued; SEELIGER (27).

Anatomy of *Archiascidia* in relation to general morphology and phylogeny of Tunicata; JULIN (15).

Anatomy and affinities of *Herdmania* (*Euherdmania*); RITTER (25).

Structure of branchiæ with reference to classification of Tunicata; DAMAS (6).

Segmentation of tail in *Oikopleura* and other *Appendiculariæ*; DAMAS (6).

Histology of vascular system in Tunicata, general morphological conclusions; FERNANDEZ (9).

Circulation of blood in *Ciona*; ENRIQUES (8).

Polymorphism of *Dolchinia*; KOROTNEFF (16 & 17).

Structure of stolon in *Dolchinia* and *Doliolum*; KOROTNEFF (17).

Spermatozoa of Tunicata; RETZIUS (24).

Parasitic fish (*Fierasfer*) in *Styela aurata*; SLUITER (28).

Mesozoon (*Lohmannella*), parasitic in *Fritillaria*; NERESHEIMER (21).

Self- and cross-fertilisation in Ascidians; GUTHERZ (10).

B. EMBRYOLOGY.

Development of ovarian egg in *Cynthia* ; BLUNTSCHLI (3).

Differentiation in unsegmented egg of Tunicata ; CONKLIN (4 & 5).

Anatomy of larva of *Distaplia* ; DAMAS (6).

Development of *Archiascidia*, placental attachment of embryo ; JULIN (15).

Development of branchia in Tunicata ; DAMAS (6), JULIN (14).†

C. DISTRIBUTION.

1. *Geographical.*

Distribution of *Polyzoine*, new localities for many spp. ; MICHAELSEN (19).

Spitzbergen and Bear Island ; HARTMEYER (11).

North Sea and Baltic Plankton ; ANON (1).

N. W. Europe, *Alloeocarpa*, n. sp. ; MICHAELSEN (19).

Atlantic, Cape, Agulhas Bank, E. Africa, Sumatra, Enderby Land, Bouvet Id., n. spp. ; MICHAELSEN (20).

Plymouth ; MAR. BIOL. ASS. (18).

Belgium, *Molgulida*, n. sp. ; DAMAS (7).

Portugal, *Pyrosoma* ; NOBRE (22).

Goree, W. Africa, *Alloeocarpa*, n. sp. ; MICHAELSEN (19).

Naples, *Archiascidia*, n. g. ; JULIN (15).

Ægina, n. sp. ; HARTMEYER (12).

Southern Russia ; SOWINSKY (29).

Red Sea, *Eusynstyela*, n. sp. ; MICHAELSEN (19).

Dar-es-Salâm, *Diandrocarpa*, n. sp. ; MICHAELSEN (19).

East Indian Archipelago, n. spp. ; SLUITER (28).

Amboina, *Salpa*, n. spp. ; APSTEIN (2).

Port Jackson, *Chorizocarpa*, n. sp. ; MICHAELSEN (19).

California, n. sp. ; RITTER (25).

2. *Geological.*

[Vacant.]

III. SYSTEMATIC INDEX†.

Abyssascidia pediculata, 304 metres, p. 27, pl. iv, figg. 13-17 ; SLUITER, Tunic. Siboga i, n. sp.

Alloeocarpa, p. 72, key to spp. p. 73, *fusca*, p. 73, pl. ii, figg. 17-19, *zschanui*, p. 88, *incrustans*, p. 88, pl. i, fig. 13, *intermedia*, p. 91, *bridgesi*, p. 92 ; MICHAELSEN, Mt. Mus. Hamburg xxi.

A. hupferi, Goree, W. Africa, p. 77, pl. ii, figg. 14-16, *apolis*, N. W. Europe, p. 81, pl. i, figg. 9-12 ; MICHAELSEN, t. c. n. spp.

Amaroucium fuscum, p. 324 ; HARTMEYER, Zool. Anz. xxvii.

A. vitreum, Ægina, p. 325, text-figg. 1 & 2 ; HARTMEYER, t. c. n. sp.

Archiascidia n. g. (*Archiascidiidae*) *neapolitana*, Bay of Naples ; JULIN, Mt. Stat. Neapel xvi, pp. 489-552, pl. xx, n. sp.

Archiascidiidae, n. fam., near *Clavelinidae*, p. 548 ; JULIN, t. c.

† When the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- Ascidia mentula*, branchia, p. 801; DAMAS, Arch. Biol. xx: *A. divisa*, p. 30, pl. v, fig. 20, *cylindracea*, p. 32, pl. v, figg. 17-19; SLUITER, Tunic. Siboga i.
- A. krechii*, Cape, p. 253, pl. x, fig. 8, pl. xiii, figg. 59-61; MICHAELSEN, Stolid. Ascidiën Valdivia: *A. lapidosa*, p. 32, pl. v, figg. 1-5, *spinosa*, p. 34, pl. ii, fig. 5, pl. v, figg. 6-10, *granosa*, p. 36, pl. v, figg. 11-14, *mikreuterica*, p. 37, pl. v, figg. 15 & 16, *aperta*, 90-274 metres, p. 38, pl. ii, fig. 4, pl. vi, figg. 1-5, *austera*, p. 39, pl. vi, figg. 6-8, *perflua*, 274 metres, p. 40, pl. vi, figg. 9-11, *tricuspis*, 560 metres, p. 42, pl. vi, figg. 12 & 13, *bisulca*, p. 43, pl. vi, figg. 14-16, *limpida*, 310 metres, p. 44, pl. ii, fig. 2, pl. vi, figg. 17 & 18, *rhabdophora*, p. 45, pl. vi, figg. 19-23; SLUITER, Tunic. Siboga i: **n. spp.**
- Ascopera bouvetensis*, near Bouvet Id., 439 metres, p. 188, pl. x, fig. 7, pl. xi, figg. 20-22; MICHAELSEN, Stolid. Ascidiën Valdivia, **n. sp.**
- Bathyoncus enderbyanus*, p. 226, pl. x, fig. 1, pl. xiii, figg. 45-48, *herdmani*, p. 228, pl. x, fig. 3, fig. 3, pl. xiii, figg. 49-51, off Enderby Land, 4636 metres; MICHAELSEN, t. c.: **n. spp.**
- Bathypera*, **n. g.** (*Molgulidae*), p. 192, *splendens*, off Enderby Land, 4636 metres, p. 192, pl. x, fig. 9, pl. xi, figg. 15-19; MICHAELSEN, t. c. **n. sp.**
- Boltenia bouvetensis*, off Bouvet Id., 567 metres, p. 216, pl. x, fig. 6, pl. xi, figg. 23 & 24; MICHAELSEN, t. c., **n. sp.**
- Botryllus separatus*, p. 100, pl. xv, fig. 22; SLUITER, Tunic. Siboga i, **n. sp.**
- Chelyosoma sibogae*, 275 metres, p. 18, pl. i, fig. 3, pl. iv, figg. 11 & 12; SLUITER, t. c. **n. sp.**
- Chorizocarpa*, **n. g.** (*Polyzoinae*), p. 92, *sidneyensis*, p. 93, pl. ii, figg. 24-26, *michaelseni*, p. 108, pl. ii, figg. 27 & 28; MICHAELSEN, Mt. Mus. Hamburg xxi.
- C. guttata*, Port Jackson, p. 104, pl. ii, figg. 20-23; MICHAELSEN, t. c. **n. sp.**
- Ciona intestinalis*, circulation; ENRIQUES, Arch. zool. ital. ii, pp. 11-17: cross- and self-fertilisation, p. 115; GUTHERZ, Arch. mikr. Anat. lxiv: spermatozoa, p. 15, pl. v, figg. 14-24; RETZIUS, Biol. Untersuch. (n. s.) xi.
- C. indica*, 64-274 metres, p. 24, pl. iv, figg. 1-3; SLUITER, Tunic. Siboga i, **n. sp.**
- Clavelina lepadiformis*, development of branchia, p. 792; DAMAS, Arch. Biol. xx: spermatozoa, p. 16, pl. v, figg. 25-36; RETZIUS, Biol. Untersuch. (n. s.) xi.
- Corella aequabilis*, 13-397 metres, p. 17, pl. iv, figg. 7-10; SLUITER, Tunic. Siboga i, **n. sp.**
- Corynascidia sedens*, 694 metres, p. 20, pl. vii, figg. 6-9; SLUITER, t. c. **n. sp.**
- Culeolus murrayi*, p. 219, pl. x, fig. 5, pl. xi, figg. 27 & 28; MICHAELSEN, Stolid. Ascidiën Valdivia.
- C. gigas*, 924 metres, p. 102, pl. i, fig. 1, pl. xii, figg. 1-3, *herdmani*, 204-521 metres, p. 105, pl. xii, figg. 4-9, *thysanotus*, 450 metres, p. 106, pl. ii, fig. 1, pl. xii, figg. 10-13, *annulatus*, 1994 metres, p. 108, pl. xii, fig. 14, pl. xiii, figg. 1-4, *quadrula*, 694 metres, p. 109, pl. xiii, figg. 5-9; SLUITER, Tunic. Siboga i, **n. spp.**
- Cynthia microcosmus*, development of ovarian egg; BLUNTSCHLI, Morphol. Jahrb. xxxii, pp. 391-450, pls. ix & x, 5 text-figg.
- Cynthiopsis* **n. g.** (*Halocynthidae*) p. 200, *valdivia*, Cape, p. 201, pl. xii, figg. 35-40; MICHAELSEN, Stolid. Ascidiën Valdivia, **n. sp.**
- C. herdmani*, p. 208, pl. xii, figg. 41-43; MICHAELSEN, t. c.
- Diandrocarpa*, p. 42, key to spp. p. 43, *botrylloopsis*, p. 43, *monocarpa*, p. 43, forma typica, p. 44, var. *philippinensis* **n. var.** p. 48, pl. i, fig 5; MICHAELSEN, Mt. Mus. Hamburg xxi.

- D. bråkenhielmi*, p. 50, forma typica, Gulf of Mexico, p. 51, var. *stuhlmanni* **n. var.** Dar-es-Sâlam, p. 52, pl. i, fig. 4; MICHAELSEN, t. c. **n. sp.**
- Distaplia magnilarva*, development of branchia, p. 795, anatomy of larva, p. 827; DAMAS, Arch. Biol. xx.
- Dolchinia mirabilis*; KOROTNEFF, Biol. Centrbl. xxiv, p. 61 & figg. and Mt. Stat. Neapel xvi, p. 480 & figg.
- Doliolum*, structure of stolon; KOROTNEFF, Mt. Stat. Neapel xvi, p. 486 & figg.
- Ecteinascidia nexa*, p. 11, pl. iii, figg. 1-5, *multiclathrata*, p. 12, pl. iii figg. 6-8; SLUITER, Tunic. Siboga i, **n. spp.**
- Eugyra molguloides*, p. 111, pl. xiii, figg. 10-15; SLUITER, t. c. **n. sp.**
- Euherdmania*, **n. nom.** for *Herdmania*, Ritter, non Hartmeyer, p. 650; RITTER, Zool. Anz. xxvii.
- Eupera* **n. g.** (*Halocynthiidae*) p. 222, *chuni*, Atlantic, 4990 metres, p. 222, pl. x, figg. 10 & 11, pl. xi, figg. 29-34; MICHAELSEN, Stolid. Ascidien Valdivia, **n. sp.**
- Eusynstyela* **n. nom.** for *Michaelsonia*, van Name, p. 36, key to spp. p. 37, *tincta*, p. 37; MICHAELSEN, Mt. Mus. Hamburg xxi.
- E. hartmeyeri*, Red Sea &c. p. 38, pl. i, fig. 1; MICHAELSEN, t. c. **n. sp.**
- Fritillaria* spp. infested by parasitic Mesozoon *Lohmannella*; NERESHEIMER, Zeitschr. wiss. Zool. lxxvi, pp. 137-166, 2 pls., 6 text-figg.
- Gyndrocarpa*, p. 29, key to spp. p. 30, *placenta*, p. 30, *domuncula*, p. 33; MICHAELSEN, Mt. Mus. Hamburg xxi.
- G. domuncula*, Agulhas Bank and off E. Africa, 100-400 metres, p. 247, pl. x, fig. 14, pl. xiii, fig. 58; MICHAELSEN, Stolid. Ascidien Valdivia : *G. nigricans*, p. 91, pl. xv, figg. 1-4, *maxima*, p. 93, pl. xv, figg. 5-7, *latericius*, p. 94, pl. xv, figg. 8-11, *quadricorniculis*, p. 95, pl. xv, figg. 12 & 13, *purpurea*, p. 96, pl. xv, figg. 14 & 15, *similis*, p. 97, pl. xv, figg. 16 & 17, *systematica*, p. 98, pl. xv, figg. 18-21; SLUITER, Tunic. Siboga i : **n. spp.**
- Halocynthia chilensis*; p. 15, text-fig.; MICHAELSEN, Mt. Mus. Hamburg xxi.
- H. vanhoeffeni*, Cape, p. 197, pl. x, fig. 13, pl. xii, fig. 44; MICHAELSEN, Stolid. Ascidien Valdivia : *H. transversaria*, p. 48, pl. xi, figg. 1-4, *breviramosa*, p. 49, pl. xi, figg. 5-7, *polycarpa*, 487 metres, p. 50, pl. xi, figg. 8 & 9; SLUITER, Tunic. Siboga i : **n. spp.**
- Herdmania* **n. g.** [see also *Euherdmania*], (*Herdmaniidae*) *claviformis*, California, p. 240, pls. xviii & xix; RITTER, Mark Anniversary Volume, **n. sp.**
- Herdmaniidae*, **n. fam.**, p. 239; RITTER, t. c.
- Kükenthalia*, p. 112, *borealis*, p. 113; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Lithonephrya eugyranda*, p. 164, text-fig. 1; DAMAS, Arch. Biol. xxi.
- Metandrocarpa* **n. g.** (*Polyzoineae*) p. 69, *dura*, p. 70, pl. i, fig. 8; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Microcosmus albidus*, Cape, p. 213, pl. x, fig. 4, pl. xi, figg. 25 & 26; MICHAELSEN, Stolid. Ascidien Valdivia : *M. hemisphaerium*, p. 52, pl. xi, figg. 12-14, *arenaceus*, p. 53, pl. xi, figg. 15-18; SLUITER, Tunic. Siboga i : **n. spp.**
- Molgula echinosiphonica*, branchia, p. 782; DAMAS, Arch. Biol. xx : *M. occulta*, p. 167, text-fig. 2, *ampulloidis*, p. 170, text-fig. 3, *socialis*, p. 174, text-fig. 4, *macrosiphonica*, p. 177, text-fig. 5; DAMAS, op. cit. xxi.
- M. dentifera* (Ed. v. Beneden MS.), Belgium, p. 179, text-fig. 6; DAMAS, t. c. : *M. longipedata*, p. 113, pl. xiv, figg. 1-3, *flagrifera*, p. 114, pl. xiv, figg. 4-6, *crinita*, 69-694 metres, pl. xiii, figg. 16-18, *calvata*, p. 116, pl. xiv, figg. 7-10, *sordida*, 1788 metres, p. 118, pl. xiv, figg. 11-16, *vitrea*, p. 119, pl. xiv, figg. 17-19; SLUITER, Tunic. Siboga i : **n. spp.**

- Monandrocarpa*, **n. g.** (*Polyzoineæ*), p. 53, *tritonis*, Cape, p. 54; MICHAELSEN, Mt. Mus. Hamburg xxi: *M. tritonis*, Cape, p. 240, pl. x, fig. 2, pl. xiii, figg. 55-57; MICHAELSEN, Stolid. Ascidien Valdivia, **n. sp.**
- Oikopleura dioica*, segmentation of tail, p. 747; DAMAS, Arch. Biol. xx.
- Peropherea listeri*, development of branchia, p. 785; DAMAS, t. c.
- Phallusia mammillata*, cross- and self-fertilisation, p. 114; GUTHERZ, Arch. mikr. Anat. lxiv.
- Podoclavella molluccensis*, p. 5, *detorta*, p. 6, pl. iii, figg. 18-22, *fecunda*, p. 7, pl. iii, figg. 23 & 24, *procera*, p. 8, pl. iii, figg. 14-17; SLUITER, Tunic. Siboga i : **n. spp.**
- Polyandrocarpa* **n. g.** (*Polyzoineæ*) *lapidosa*, p. 34, pl. i, figg. 2 & 3; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Polyzoa*, p. 55, *opuntia*, p. 58, subsp. *patagonica* **n. subsp.** E. Patagonia, p. 59, subsp. *pictonis*, p. 60, subsp. *waerni*, p. 61, subsp. *opuntia* (*typica*), p. 61, subsp. *gordiana*, p. 63, subsp. *lennoxensis*, p. 64, subsp. *coccinea*, p. 64; MICHAELSEN, Mt. Mus. Hamburg xxi.
- P. reticulata*, p. 65, pl. i, figg. 6a-d, & 7, *fulcilandica*, p. 68; MICHAELSEN, t. c. : *P. reticulata*, p. 244; MICHAELSEN, Stolid. Ascidien Valdivia.
- Polyzoineæ*, def. p. 26, key to genera, p. 28; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Pterygascidia* **n. g.** (*Corellidæ*), p. 21, *mirabilis*, 216 metres, p. 21, pl. ii, fig. 3, pl. vii, figg. 1-5; SLUITER, Tunic. Siboga i, **n. sp.**
- Rhabdocynthia latisinuosa*, 204 metres, p. 55, pl. xi, figg. 10 & 11; SLUITER, t. c. **n. sp.**
- Rhodosoma papillosum*, p. 26, pl. i, fig. 2, pl. iv, figg. 4-6; SLUITER, t. c.
- Rhopalopsis fusca*, p. 13, pl. ii, fig. 6; SLUITER, t. c.
- Rhopalopsis defecta*, p. 14, pl. iii, figg. 9-11, *tenuis*, p. 15, pl. iii, figg. 12 & 13; SLUITER, t. c. **n. spp.**
- Salpa henseni*, p. 651, pl. xii, fig. 1; APSTEIN, Rev. Suisse Zool. xii.
- S. amboinensis*, p. 651, pl. xii, figg. 2-10, *picteti*, p. 655, pl. xii, figg. 12-14, Amboina; APSTEIN, t. c. **n. spp.**
- Stolonica*, p. 68, *socialis*, p. 69; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Styela gelatinosa*, p. 236; MICHAELSEN, Stolid. Ascidien Valdivia: *S. aurata*, p. 57, pl. vii, fig. 16, *palinorsa*, p. 60, pl. vii, fig. 17; SLUITER, Tunic. Siboga i.
- S. braueri*, off Sumatra, 750 metres, p. 232, pl. x, fig. 12, pl. xiii, figg. 52-54; MICHAELSEN, Stolid. Ascidien Valdivia: *S. sobria*, p. 63, pl. viii, fig. 1, *floccosa*, p. 64, pl. viii, figg. 2-4, *albomarginata*, p. 65, pl. viii, figg. 5-8, *contecta*, p. 66, pl. viii, figg. 9-12, *reniformis*, p. 67, pl. viii, figg. 13-16, *thelyphanes*, p. 68, pl. viii, figg. 17-19, *circummarata*, p. 70, pl. i, fig. 4, pl. ix, fig. 1, *orbicularis*, 538-694 metres, p. 71, pl. i, fig. 5, pl. ix, figg. 2 & 3, *reducta*, p. 72, pl. ix, figg. 4-6, *sedata*, p. 74, pl. ix, figg. 7-10, *incubita*, p. 75, pl. ii, fig. 7, pl. ix, figg. 11-14, *albo-punctata*, p. 76, pl. ix, figg. 15-17, *mæandria*, p. 77, pl. ix, figg. 18-20, *biforis*, p. 78, pl. x, figg. 1-4, *robusta*, p. 79, pl. x, fig. 5, *pustulosa*, p. 80, pl. x, figg. 6-9, *profunda*, 959 metres, p. 81, pl. x, figg. 10-13, *ambonensis*, p. 83, pl. x, figg. 14 & 15, *psammodes*, p. 84, pl. x, figg. 16-19, *glebosa*, p. 85, pl. x, figg. 20-22, *nutrix*, p. 86, pl. x, figg. 23 & 24, *asymmetrica*, p. 87, pl. x, figg. 25 & 26, *cylindrica*, p. 88, pl. xi, figg. 19-21; SLUITER, Tunic. Siboga i : **n. spp.**
- Stylopsis grossularia*, development of branchia, p. 771; DAMAS, Arch. Biol. xx.
- S. scævola*, p. 89, pl. vii, figg. 10-15; SLUITER, Tunic. Siboga i, **n. sp.**

VII. MOLLUSCA.

BY

E. R. SYKES, B.A.

Assisted by E. A. SMITH, I.S.O.

CONTENTS.

	Page		Page
Introduction	2	Opisthobranchiata	71
I. TITLES	4	Nudibranchiata	71
OBITUARY NOTICES, &c.	36	Tectibranchiata (including Pteropoda)	72
II. BIOLOGY.		Nucleobranchiata	73
Anatomy, Physiology, &c.	37	Prosobranchiata	73
Distribution.		Pectinibranchiata	73
Geographical.		Scutibranchiata	84
Non-Marine.	41	Scaphopoda	86
Marine	48	Pelecypoda.	87
Geological	52	Septibranchiata	87
III. SYSTEMATIC.		Eulamellibranchiata	87
Cephalopoda	59	Pseudolamellibranchiata	89
Dibranchiata	60	Filibranchiata	90
Ammonia	60	Protobranchiata	91
Tetrabranchiata	61	Amphineura	91
Gastropoda	61	Aplacophora	91
Pulmonata	61	Polyplacophora	91
Stylommatophora.	61		
Basommatophora	70		

INTRODUCTION.

THOUGH the literature for the year 1904 shows an increase over that for the previous year, this may, in a measure, be accounted for by the fact that the 'Record' has been kept open until a slightly later date.

As in past years, TRYON's (619) 'Manual' has regularly appeared, Mr Pilsbry being now engaged on the account of the *Achatinidae*. Eleven parts of the 'Conchylien-Cabinet' (426) have been issued, dealing with *Helix*, *Naninidae*, *Agnatha*, and *Chitonidae*. A small portion of BRONN's (86) 'Klassen, &c.' has appeared, and a further livraison of COSSMANN's (140) very useful 'Essais de Paléoconchologie.' The latter author has also commenced, with PISSARRO (144), an illustrated 'Iconographie' in which it is proposed to figure all the known fossils of the Paris Basin; the checklist of this fauna compiled by CHÉDÉVILLE (111) has now been completed. HIDALGO (304, 305) has issued a further portion of his 'Obras,' and commenced a catalogue of the Philippine fauna. KOBELT (355) has made progress with his account of the European Marine Mollusca, and has in ROSSMAESSLER (543) given a summary of the non-marine shells, with an index to previous volumes of this work. To SACCO (546) we owe a supplement, with a necessary index, to his Tertiary fauna of Liguria. The Pteropods of the 'Siboga' Expedition have been dealt with by TESCH (610), and the Heteropods collected during several voyages of the 'Princesse-Alice' have received attention from VAYSSIÈRE (627). It may also be mentioned that a list of papers published in the 'Nachrbl. Deutsch. malak. Ges.', complete from the beginning, has been issued.

The papers dealing solely with the descriptions of new forms appear to be slightly less numerous than usual. Amongst those dealing with non-marine Molluscs, we may specially note PILSBRY and HIRASE (495-497) upon Japanese forms. ANDREAE (16) has described the shells collected in Central Asia during Futterer's Expedition, and GUDE (273) has completed his list of the Helicoids of that continent by some additions and corrections. A reprint of MORLET's (450) papers on the fauna of Indo-China, will prove of service, as also the list of the shells of that region given by FISCHER and DAUTZENBERG (223). SMROTH (567) has published a useful paper on the slugs of Abyssinia; and ROCHEBRUNE and GERMAIN (534) have issued, unfortunately without figures, diagnoses of some Central African shells. A little work, of a popular type, on the Molluscs of Germany, has been written by LEHMANN (393), while TAYLOR (609) has continued his account of the British fauna. Two papers by HUDLESTON (314) and SMITH (575), dealing with the fauna of Lake Tanganyika, in the light of the hypothesis put forward some years ago as to its origin, should not be overlooked.

HUTTON's (317) 'Index' to the New Zealand fauna, and KEEP's (345) work on West American shells relate both to marine and non-marine molluscs.

Turning to marine shells, we may notice HÄGG's (277) account of the forms collected during the Swedish Polar Expedition. JATTA (330) and KWIETNIEWSKI (377) have dealt, respectively, with Mediterranean Cephalopods and Pteropods, while SYKES (604) has commenced a supplemental account to that published of the 'Porcupine' Expedition. Some molluscs from Northern Africa have been catalogued and described by PALLARY (467, 468), though it is doubtful whether the validity of all his new species can be maintained. Some new forms have been described from South Africa by SOWERBY (589), and SMITH (578) has issued a useful addendum to the known fauna, while he has also (579) dealt with some forms from the Bay of Bengal. The Nudibranch fauna of East Africa has been noticed by ELIOT (208-210), and MELVILL (433, &c.) has described some species from the

Persian Gulf, &c. PILSBRY (492, 493) has published diagnoses of new forms from Japan, and STREBEL (599) has added to our knowledge of the fauna of the Magellanic Region. The Australian fauna has, as in past years, formed the subject of papers by HEDLEY (291, &c.), including an interesting note on the 'Bassian Isthmus' as bearing on the present fauna, while he has also (293) described some deep water shells from New Zealand. PRITCHARD and GATLIFF (505, 506) have continued their work on the Victorian fauna. Two papers by HOYLE (312, 313) on Cephalopods may also be noticed, one dealing with some species from Ceylon, and the other with those collected by the 'Albatross.'

Anatomical papers have been numerous and valuable. Development and Embryology have been studied by CASTEEL (99, 100), CONKLIN (133-135), FUJITA (237), GLASER (258), JANSSENS & ELDRINGTON (329), KOSTANECKI (372, 373), LEE (391, 392), LOEB (399), OSBORN (461, 462), SMALLWOOD (570), THESING (611), and WILSON (653) and others. The larval eye of *Chiton* has been dealt with by HEATH (285), while MAZZARELLI (431) has written on the free Opisthobranchiate larva. Statocysts in the Cephalopods have attracted FRÖHLICH (235), and GROSVENOR (269) has issued an interesting paper on nematocysts in Nudibranchs. DISTASO (192) has written on the nervous system of *Oscanius*, JORDAN (342) on that of the Pulmonata, while HYDE (318, 319) has dealt with the nerves and their endings in the eye of *Pecten*. MARCEAU (412, &c.) has published several notes on general anatomy, and of the other papers of this class we may mention ABRIC (1, &c.) and CUÉNOT (159) on Nudibranchs, BOISSEvain (73) on *Dentalium*, FLEURE (226, &c.) on *Haliotis*, GODWIN-AUSTEN (260) on *Eurystoma*, HEATH (286, &c.) on the Aplacophora, HERDMAN (298, &c.) on the pearl oyster, KESTEVEN (350) on *Megalatractus*, MEISENHEIMER (432) on *Desmopterus*, PÖTZSCH (501) on *Planorbis*, RANGLES (509) on some *Trochidae*, SIMROTH (566) on several slugs, VAYSSIÈRE (629) on some Mediterranean Opisthobranchs, and WISSEL (656) on the Chitons collected by Schauinsland.

Turning to the more strictly systematic papers, we may notice DALL'S (171) work on the 'Frog-Shells and Tritons,' with the criticism by PILSBRY & VANATTA (498). With BARTSCH (172), Dr Dall has also issued a review of the *Pyramidellidae*, including a number of new generic names. CASEY (98) has described, unfortunately without any review of the family, a number of genera in the *Pleurotomidae*. Other papers of interest include BARTSCH (35) on *Sonorella*; a list of *Sphaerospira* by FULTON (240), and some notes on *Arcidae* by LAMY (380, &c.). HOYLE (310) has published a key to the recent Dibranchiate Cephalopods, and GRABAU (265) has issued a very interesting work on the phylogeny of *Fusus*.

Variation has continued to prove an attractive subject, DAVENPORT (178, 179) having, separately, and with HUBBARD (180) continued his work on *Pecten*, MALARD (409), METCALF (445), and WELDON (647) having dealt, respectively, with *Patella*, *Neritina*, and *Clausilia*, while the ever-present subject of *Helix nemoralis* has formed the subject of a work by LANG (384).

Pearls and their formation have been written on by DUBOIS (202-205), HERDMAN (298, &c.), and MCINTOSH (404).

Nomenclature, in the broad sense, has been once or twice the subject of serious discussion, and, were the law of the survival of the fittest applied to specific names, one cannot help feeling that a small landshell, rejoicing in the name of *Macrochlamys izushichitojimana* would be somewhat handicapped.

CORRIGENDA IN ZOOLOGICAL RECORD FOR 1903, VOL. XL.

p. 42. Under Mexican Region, insert Costa Rica:—New species of *Bulinulus* and *Helicina*; PRESTON (427).

p. 56. Transfer entry of *Conulinus* to *Buliminidae* on p. 61.

p. 59. For *Papuina pseudosatsumana* read *P. pseudosatsuma*.

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2. —. Sur les nématoblasts et les nématocysts des Eolidiens. T. c. pp. 7-9.
3. —. Sur un nouveau Doridien de Wimereux. T. c. pp. 232-234.
4. —. Les cellules agglutinantes des Eolidiens. C.R. Ac. Sci. cxxxix, pp. 611-613.
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6. ALDRICH, T. H. A new Oyster from the Eocene of Alabama. Nautilus xviii, p. 62, pl. iii.
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10. —. New land snails from South America. Nautilus xvii, pp. 102-104.
11. —. Notes on a few shells. Op. cit. xviii, pp. 21 & 22.
12. —. Report on semi-fossil land shells found in the Hamakua District, Hawaii. J. Malac. xi, pp. 65-71, pl. v.
13. —. Études sur la faune malacologique des îles Sandwich (5^e Partie). J. Conchyl. li, pp. 295-307, pl. xii.
14. —. Notes critiques et synonymiques, xxxi-lxxv. Op. cit. lii, pp. 288-316.
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16. —. Land- und Süsswasserschnecken aus Zentral- und Ostasien. In 'Durch Asien,' by K. Futterer, iii, pp. 43-90, 1 pl., 1903. [Pp. 43-56 appear to be a reprint of Title No. 12 in 1900.]
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18. ANON. Les perles. Naturaliste 1904, pp. 22-24, 72-74, 85-87.

* An asterisk prefixed to a title indicates that the Recorder has not seen the work in question.

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20. —. Organisation et Morphologie des Tridacnides. C.R. Ac. Sci. cxxxviii, pp. 296-298, figg.
21. —. L'acquisition de la forme arrondie chez les mollusques acéphales dimyaires fixés en position pleurothétique. (Note préliminaire.) Arch. zool. exp. Notes ii, pp. clxxiii-clxxxvii, 10 figg.
22. ARKANGHEL'SKII, A. D. Paleotzenoviuya Otlozheniya Saratovskagho Povolzh'ya i ikh fauna. [Fauna of Paleocene Strata of Saratov District.] Mater. Geol. Russlands xxii, pp. 1-207, pls. i-xii.
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— [See also DALL & BARTSCH (172).]
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A.—ANATOMY, PHYSIOLOGY, &c.

1. MORPHOLOGY.

General :—Structure of the Molluscan heart ; MARCEAU (412, &c.).

Cephalopoda :—Statocysts ; FRÖHLICH (235).—The pharynx of the Cephalopods ; HEINRICH (296).—Notes on some Cephalopods ; HOYLE (312, &c.).

Gastropoda :—Account of Gastropods continued by SIMROTH in BRONN (86).—Notes on anatomy of *Damayantia*, *Collingea*, and *Isselentia* ; COLLINGE (126).—Anatomy of *Eurystoma vittata* ; GODWIN-AUSTEN (260). Biology of *Limax variegatus* ; KÜNKEL (375).—Anatomy of *Vitrella quenstedtii* Clessin ; SEIBOLD (553).—Anatomy of *Ostracolethe* ; SIMROTH (566).—Anatomy of some Hungarian *Helicidæ* ; SOOS (586).

Nematocysts in Nudibranchs ; ABRIC (2) : GROSVENOR (269) : LENDENFELD (394).—On *Doris giardi*, n. sp. ; ABRIC (3).—Animal and radula of *Doris planata* ; ELIOT (207).—Anatomy of *Lottia gigantea* Gray ; FISHER (225).—Anatomy of *Haliotis* ; FLEURE (226).—Anatomy of *Corolla (Cymbulopsis) spectabilis* Dall ; HEATH & SPAULDING (289).—Anatomy of *Megalotactus* ; KESTIVEN (350).—Anatomy of some Gymnosomate Pteropods ; KWIETNIEWSKI (377).—Anatomy of *Desmopterus papilio* ; MEISENHEIMER (432).—Archaic form of Thecosomate Pteropod ; PELSENEER (476).—Anatomy of British *Trochidæ* ; RANGLES (509).—Anatomy of *Haminea solitaria* ; SMALLWOOD (570).—Anatomy of some Thecosomata and Gymnosomata ; TESCH (610).—Anatomy of some Heteropods ; VAYSSIÈRE (627).—Anatomy of *Akera bullata*, *Philine punctata*, *Pelta coronata*, and several Nudibranchs ; VAYSSIÈRE (629).—Anatomy of *Archidoris stellifera*, n. sp. ; VAYSSIÈRE (628).

Scaphopoda :—Anatomy and Histology of *Dentalium* ; BOISSEVAIN (73).

Pelecypoda :—Morphology and anatomy of *Tridacna* ; ANTHONY (20).—Anatomy of *Pecten tenuicostatus* ; DREW (200).—Subradular organ in *Proneomenia* and *Rhopalomenia* ; HEATH (288).—Anatomy of pearl oyster ; HERDMAN (301).—Anatomy of *Margaritifera* ; SEURAT (556, &c.).

Shell :—Structure of the shell of *Unio* ; FRIERSON (233).

Radula :—*Maculotriton* and *Caducifer* ; PILSBRY & VANATTA (498).—Some Australian Gastropods and Scaphopods ; VERCO (630).

Muscular :—Form and structure of adductor muscles in Pelecypods ; ANTHONY (19).—Muscular structure of the heart in *Nassa* ; MADER (405).—Structure of the muscles in *Anomia* ; MARCEAU (416).—Muscular structure of the heart ; VIGIER (632).

Circulatory :—Blood of marine Gastropods ; COUVREUR (149).—Structure of the heart in *Octopus* ; MARCEAU (412).—Structure of the Gastropod and Pelecypod heart ; MARCEAU (415, 417).—On the heart in *Aplysia* ; STRAUB (598).—Histology of the 'myocarde' in primitive molluscs ; VIGIER & VLÈS (633).

Nervous :—Nervous system of Pelecypoda with special reference to *Nucula* ; BURNE (93).—On the nervous system of *Oscanius membranaceus* and *Pleurobranchia meckeli* ; DISTASO (192).—Nervous system in *Pecten* ; DREW (199).—Nervous system of *Proneomenia* and *Rhopalomenia* ; HEATH (288).—Retinal nerve-endings in eye of *Pecten* ; HYDE (319).—Nerve distribution in the eye of *Pecten irradians* ; HYDE (318).—Nervous system of *Rissoa elata* ; QUINTARET (507).—Nervous system of Opisthobranchis ; VAYSSIÈRE (629).—Sensory organs in the tentacles of *Cardium* ; ZUGMAYER (670).

Generative :—Generative organs of *Ariophanta juliana* ; OVERTON (463).

Conjunctive tissue :—*Aplysia punctata* ; STEPHAN (595).

2. PHYSIOLOGY.

Occurrence of zinc in *Sycotypus* and *Fulgur* ; BRADLEY (81).—Occurrence of Taurin in Invertebrate muscle ; BRADLEY (82).—Red secretion in *Aplysia* ; BRIOT (84).—Nervous Regulation of heart in *Venus mercenaria* ; BUDINGTON (91).—Stimulation of heart-nerves in Mollusca ; CARLSON (96).—Pigment of the tegument of *Aplysia* ; GAUTIER & VILLARD (245).—Physiology of colour in *Helix* ; GÖPPELSROEDER (263).—Function of salivary glands in *Helix pomatia* ; GORKA (264).—Luminous Molluscs ; HAUPT (283).—Luminous and integumentary organs of Cephalopoda ; HOYLE (312).—Physiology of the nervous system in Pulmonata ; JORDAN (342).—Functions of the two parts of the adductor muscles in Pelecypods ; MARCEAU (413).—Mechanism of contraction of adductor muscles in Pelecypods ; MARCEAU (414).—Muscular contraction ; MAXWELL, Science xix, p. 249.—Movement of the eye in Cephalopods ; MUSKENS (452).—Effect of intense light on Molluscs ; PEARL & COLE (472).—Reactions of *Agriolimax* ; PEARL & WITT (473).—Movement of the Retina in *Eledone* ; PIPER (499).—Pigmentation in *Ostrea* ; SCHIEDT (549).—Colouring matter in the shell ; SCHULZ (552).—Olfactory sense in *Helix pomatia* ; DUBOIS (201) ; YUNG (669).

3. DEVELOPMENT (Embryology and Life-History).

Spermiogenesis in *Enterokenos* ; BONNEVIE (77).—Development of Germ layers in *Fiona* ; CASTEEL (99).—Early larval development of *Fiona* ; CASTEEL (100).—Tufts of surface-bristles on the young stages of *Octopus* ; CHUN (114).—Eggs, etc., of *Parmucella* ; COLLINGE (129).—Cause of inverse Symmetry ; CONKLIN (134).—Organ-forming germ regions in Molluscs ; CONKLIN (133).—Origin of cleavage centrosomes in *Crepidula* ; CONKLIN (135).—Structure of the egg in *Sepia* ; DHÉRE (189).—Embryology of *Pecten tenuicostatus* ; DREW (200).—Embryology of *Quadrula* ; FRIERSON (234).—Formation of Germinal Layers in Gastropods ; FUJITA (237).—Excretory activities in the nuclei of embryos ; GLASER (258).—Larval eye of Chitons ; HEATH (285).—Eggs of *Lotorium spengleri* ; HEDLEY (292).—Reproduction of *Paludestrina taylora* ; JACKSON & TAYLOR (326).—The Chromosomes during maturation in the Egg of *Aplysia punctata* ; JANSSENS & ELINGTON (329).—Development of *Limnaea stagnalis* ; J. H., Rochester Natural. iii, p. 236.—Artificial parthenogenesis in the egg of *Mactra* ;

KOSTANECKI (372).—Evolution of the spermatozooids in *Helix pomatia*; LEE (391).—On the structure of the spermatozooids in *Helix pomatia*; LEE (392).—Artificial parthenogenesis in Molluscs; LOEB (399).—The primitive kidney in Mollusca; MAZZARELLI (429).—The free larvæ of Opisthobranchs; MAZZARELLI (431).—Torsion in the Opisthobranchs and the primitive coiling in *Actæon*; MAZZARELLI (430).—Amitosis in the embryo of *Fasciolaria*; OSBORN (461, 462).—On the development of the kidney, pericardium, and heart in *Planorbis corneus*; PÖTZSCH (501).—Influence of temperature on the growth of freshwater shells; RAJAT (508).—The sperm of the Invertebrata, with reference to Mollusca; RETZIUS (521).—Development of gill in *Mytilus*; RICE (525).—Morphology and genesis of the egg-integument in Cephalopoda and Chitons; SCHWEIKART (550, 551).—Embryology of *Haminea solitaria*; SMALLWOOD (570).—Spawn of Nudibranchs; SMALLWOOD (569).—Maturation, fertilization, etc., of *Haminea solitaria*; SMALLWOOD (570).—Oligopyrene and apyrene sperm in the Prosobranchs; STEPHAN (596).—Spermatogenesis of the Cephalopoda; THESING (611).—Development of *Patella* and *Dentalium*; WILSON (653).

4. ETHOLOGY (Habits, Relation to Environment, &c.).

Habits of *Littorina rudis*; BOHN (71, 72).—Note on Ethology of *Littorina*; BOHN, C.R. Ac. Sci. cxxxviii, p. 112.—Slime spinning by *Sphærium corneum*; CARTER, Naturalist 1904, p. 156.—Note on dispersal of Mollusca; CAZIOT (101).—Habits of *Testacella haliotide*a; COOKE (138).—Animal Ecology of Cold Spring Sand Spit; DAVENPORT (178).—Life-history of *Haliotis*; FLEURE (227).—The habits of Solenogastres; HEATH (286).—Habits of *Physa gyrina*; HYNING (320).—Habits of *Paludestrina taylori*; JACKSON & TAYLOR (326).—*Ancylus* adhering to waterbeetles; JOHNSON (335).—Note on mode of distribution of *Helix*; MADOUÉ (406).—Acclimatization of some marine shells; PELSENEER (474).—On self-mutilation; REEKER (517).—Self-mutilation in Mollusca; RIGGENBACH (528).—Notes on Gambier pearl-oyster; SEURAT (554, &c.).—Epiphragms of *Thaumastus*; SMITH (572).—Ethology of Helices; STAHL (591).—Habits, etc., of *Dreissensia*; STANDEN (592).—Longevity of *Bulinulus pallidior*; STEARNS, Nautilus xviii, p. 58.—Acclimatization of pearl-oyster; VASSEL (624).—Locomotion of *Nucula*; VLÈS (635).

Pearls and their formation:—On Pearls; ANON (18).—The formation of pearls; BOUTAN (80).—General notes; DUBOIS (202).—On the secretion of pearls; DUBOIS (205).—Note on pearls; DUBOIS (204).—On the origin of pearls, and views of old authors; GIARD (253).—Recent investigations on pearl-formation; HERDMAN (298).—Pearl formation in the Ceylon Pearl Oyster; HERDMAN & HORNELL (302).—On pearls, and their formation; MCINTOSH (404).

Enteroxenos, apparently n. gen., parasitic in Holothurians; BONNEVIE (76).—New Nematode parasitic in *Helix*; CONTE & BONNET (137).—Trematode parasite of oyster; GRAHAM, Science xix, p. 247.—Parasites of pearl oyster; SHIPLEY & HORNELL (558).—Parasitic Molluscs; TÖNNIGES (615).

5. VARIATION AND TERATOLOGY.

Variation of colour in Nudibranchs; ABRIC (1).—Absence of male generative organs in *Arion hortensis*; COLLINGE (127).

On the assumption of a rounded form in laterally attached Bivalves; ANTHONY (21).—Spire variation in *Pyramidula alternata*; BAKER (31).—Monstrosities of *Helix pomatia*; BELLEVOYE (49).—Variation of *Achati-*

nella multizonata; COOKE (139).—Polytaxis in landshells; COUTAGNE (147).—Variation in *Murex brandaris*; DAUTZENBERG (175).—Variation in certain American Pectens; DAVENPORT (179).—Rib variation in *Pecten varius*; DAVENPORT & HUBBARD (180).—Variation and environment; GULICK (275).—*Haliotis* without perforations; KELSEY (346).—Abnormal *Helix pomatia*; KOBELT (364).—Study of variation in *Helix hortensis* and *nemoralis*; LANG (384).—Statistical methods of studying variation in *Patella*; MALARD (409).—Imperforate *Haliotis tuberculata*; MARQUAND (421); also Rep. Guernsey Soc. 1903, p. 233.—Variation in *Neritina*; METCALF (445).—Heavy subfossil *Helix nemoralis* from Connemara; WELCH, Rep. Belfast Club v, p. 50.—Variation in the shell of *Clausilia itala*; WELDON (647).—Distorted oyster; WINKLEY, Nautilus xviii, p. 24.—Variation of *Helix nemoralis*; WINKWORTH (655).

Sinistral *Jamnia muscorum*; BALDWIN (32).—Sinistral *Helix nemoralis*; COLLIER (124).—Sinistral *Helix pomatia*; JENNINGS (331).—Reversed *Helix aspersa*; WELCH & STELFOX (646).—Sinistral *Laoma moellendorffi* Suter; SUTER (602).

6. TAXONOMY (Phylogeny and Classification).

Note on phylogeny; BACCI & BERNARDI (23).—On evolution in the Docoglossa; FLEURE (228).—Phylogeny of *Haliotis*; FLEURE (226).—Evolution of Mollusca; GIARD (254).—Phylogeny of *Fusus*; GRABAU (265).—Key to Genera of Recent Dibranchiate Cephalopods; HOYLE (310).—Evolution of pearl oyster of Gambiers; SEURAT (554).—Inter-relationship of Gastropods; SIMROTH (566).—On the curves of the shells of Bivalves; VLÈS (634).

7. BIBLIOGRAPHIES, MUSEUMS, &c.

Museums:—List of types of Gastropods and Scaphopods from Oolites in Mus. Practical Geol., London; ALLEN, Summary Progr. Geol. Surv. 1903, pp. 175–187.—Storer Collection is now in Amer. Mus.; ANON., Amer. Mus. J. iv, p. 37.—Arrangement of Collection of Chicago Academy; BAKER (28).—Catalogue, with critical notes of Defrance collection; BIGOT & MATTE (54).—Catalogue of the Hagenmüller Palearctic collection; COUTURIER (148).—Loebbecke collection; KOBELT (361).—Catalogue of fossil types in Grenoble collection; REBOUL (515).—Gaudion collection has gone to Marseilles Museum; VAYSSIÈRE, Ann. Mus. Marseille viii, p. 15.

Bibliographies:—Canadian Palæontology for the year 1902; AMI (8).—Bibliography of W. H. Hudleston; ANON., Geol. Mag. i, p. 431.—Bibliography of A. Hyatt; CROSBY, Bull. Soc. Geol. Amer. xiv, p. 504.—Notes on Bolten's names; DALL, Nautilus xviii, p. 84.—Bibliography of Robert Etheridge; H. W., Geol. Mag. i, p. 42.—On Dates of species described by Tenison-Woods; HEDLEY (292), p. 210.—Bibliography of C. E. Beecher; JACKSON (327).—Bibliography of Zittel; KITCHIN, Geol. Mag. i, p. 90.—Contents of Vols. i–xxxv of Nachrbl. Deutsch. malak. Ges.; KOBELT, A. (354).

8. ECONOMICS.

An old 'Purple-fishery' off Crete; BOSANQUET (79).—Shell-fish culture of Ireland; BROWNE (87).—Oyster culture in Japan; DEAN (182).—Detection of pearls by X rays; DUBOIS (203).—Oysters and typhoid; GIARD (251).—Sewage and Mollusca; HERDMAN (299).—History of Ceylon pearl banks; HERDMAN (300).—On Pearl fisheries, &c.; McINTOSH (404).—Shell-fishery of the Thames estuary; MURIE (451).—Mussel fishery in Belfast Lough; PATTERSON (471).

9. STRAY NOTES.

Sulphuric acid used to poison tide-pool for collecting; CHAMBERLAIN, J. Applied Micr. vi, p. 2255.—Name 'Namatogæan' proposed for 'land and fresh-water' Molluscs; DALL, Science xix, p. 926.—*Paludestrina jenkinsi* as food for fish; DEAN, J. Conch. xi, p. 15. See HORSLEY, t. c. p. 90.—Molluscs as food for fishes; GUCCINI, Rend. Ist. Lombardo xxxvii, p. 194.—*Limnæa peregra* polluting water; HICKSON, Rep. Brit. Ass. 1903, p. 675.—A standard of value for exchanges; HORSLEY, J. Conch. xi, p. 26.—Shells as food of the 'Chipmunk'; HYNING, Nautilus xviii, p. 23.—Sense of hearing in Mollusca; LANG (385).—*Oedema in Octopus*; PETTIT (482).—On methods of collecting land and freshwater shells; SCALES (547).—Collecting land and freshwater shells; WALKER (639).—Molluscs as food for trout; WELCH, Irish Natural. xiii, p. 45.—Decalcification of dead shells due to carbonic acid; WELCH (644).

B.—DISTRIBUTION.

GEOGRAPHICAL.

N.B.—The numbers in brackets refer to the "Titles." A reference is thus given to each memoir containing any notice affecting the Molluscan fauna of the several geographical divisions here adopted. Synonymic notes and changes of systematic position are, however, not noticed here. References to minor notes, which are not included in the "List of Titles," but which contain faunistic notes of any value, are given to the work direct.

NON-MARINE MOLLUSCA. [For *Marine* see p. 48.]

Distribution of Gastropods; SIMROTH (565).

Europe:—KOBELT in ROSSMAESSLER (543) gives a full account of the fauna, its distribution, systematic classification, nomenclature, etc.

Asia:—Helicoids, supplemental notes and corrections to list; GUDE (273).

a. PALÆARCTIC ZONE.

1. *Septentrional Region.*

British Isles:—Occurrence of *Limax tenellus* in several localities; ROEBUCK (537).—Distribution of Slug Fauna, illustrated by maps, continued; TAYLOR (609).—*Paludestrina anatina* from Suffolk, new to fauna; TOMLIN (613).—On the species of *Vallonia*; WOODWARD (660).

England and Wales:—Bedfordshire: Review of fauna; WOODWARD (661).—Brecon and Radnor: Land and freshwater fauna; VAUGHAN (626).—Cambridgeshire: Review of fauna; BRINDLEY (83).—Carnarvon: Few shells from Abersoch; BALDWIN (32).—Cheshire: Landshells on Wirral Peninsula; STANDEN, J. Conch. xi, p. 49.—Derbyshire: Land and freshwater shells from Miller's Dale; JACKSON, J. Conch. xi, p. 105. Few landshells; JACKSON, t. c. p. 13.—Devon: List of non-marine mollusca from Ilfracombe and district; BEESTON & WRIGHT (48): White *Succinea oblonga* from Ilfracombe; WRIGHT (663).—Essex: *Limax cinereoniger*; PETCH, Essex Natural. xiii, p. 299: Occurrence of *Limax tenellus*; [PETCH], Nature Notes xv, p. 240.—Isle of Man: Notes on landshells; LUCAS (403).—Lancashire: Fauna of Grange-over-Sands; JACKSON & MOORE (325): Occurrence of *Arion ater*, var.; PETTY, Naturalist 1904, p. 32: Freshwater shells from Droylsden; TAYLOR, J. Conch. xi, p. 71: Non-marine shells of Lancaster; DEAN (183).—

Lincoln: Few shells mentioned; PEACOCK, *Naturalist* 1904, p. 347: *Helix virgata* at Cadney; PEACOCK, t. c. p. 156: Few shells mentioned; PEACOCK, t. c. p. 191: Few shells from Tetley Lock; CASTLE, t. c. p. 254: White *Helix lapicida* at Carlby; STOW, t. c. p. 347: Mollusca from Hubbard's Valley; CARTER (97).—Northamptonshire: Few landshells, including sinistral *Helix aspersa*; WRIGHT, J. *Northampt. Soc.* xii, p. 30: Few shells; SHAW, t. c. p. 75: Addenda to fauna; SHAW, t. c. pp. 173, 212, 277, 278.—Oxfordshire: Molluscs from near Oxford; NAPIER & CARPENTER (453).—Radnorshire: Notes on slugs; ROEBUCK (538).—Suffolk: Addenda to fauna; GREENE (267).—Surrey: *Helix cantiana* on Tooting Common; WHITWELL, J. *Conch.* xi, p. 55: *Testacella haliotidea* at Park Hill, Croydon; PARSONS, P. *Croydon Club* 1903–1904, p. xxviii: *Physa acuta* in Kew Gardens; WHITWELL (651).—Warwick: Review of fauna; WOODWARD (662).—Wiltshire: Land and freshwater shells near Marlborough; ANON., *Rep. Marlbor. Soc.* lii, p. 79.—Worcestershire: *Testacella scutulum* at Kings Norton; MADISON, J. *Conch.* xi, p. 103.—Yorkshire: Fauna of Driffield and neighbourhood; BLACKBURN (55): Shells from Hebden Bridge; CROWTHER, *Naturalist* 1904, p. 254: *Paludestrina jenkinsi* in Spen Valley; CASTLE, t. c. p. 255: *Paludestrina jenkinsi* in Holderness; PETCH, t. c. p. 141: Few shells from Hornsea Mere; PETCH, t. c. p. 191: *Helix lamellata*, etc., near Scarborough; HEY, t. c. p. 207: Few freshwater shells from Halifax; CROWTHER, *Halifax Natural.* viii, p. 86: Fauna of Langstrothdale; ROEBUCK (535): Fauna of the East Riding; PETCH (478).

Scotland:—Occurrence of *Limax tenellus*; ROEBUCK (536).—Occurrence of *Limax tenellus* in Forth Area; EVANS (216).—Ayrshire: Several landshells; GODFREY, *Ann. Scott. Nat. Hist.* 1904, p. 192.—*Helix virgata* in Fife; EVANS, t. c. p. 192.—*Vertigo anticvertigo* in Midlothian; GODFREY, t. c. p. 192.

Ireland:—Notes on some rare or local species; WELCH (642).—Notes on habitat of *Paludestrina jenkinsi*; WELCH, *Irish Natural.* xiii, p. 118.—List of some shells from North Derry; WELCH (643).—Temporary disappearance of *Paludestrina* from Larne Lough; WELCH, *Irish Natural.* xiii, p. 30.—*Cecilianella acicula* in Ulster; GRIERSON, t. c. p. 30.—Fauna of Bushy Park, Dublin; WELCH & STELFOX (645).—Mollusca of North Cork and Waterford; GRIERSON (268).—Sligo: Land and freshwater fauna; WELCH & STELFOX (646).—*Vertigo angustior* in Co. Carlow; GRIERSON, *Irish Natural.* xiii, p. 294.

Hebrides:—Landshells from Tiree; GODFREY, *Ann. Scott. Nat. Hist.* 1904, p. 193.

Faroës:—Land and freshwater Mollusca; COLLINGE (131).

Orkney Is.:—*Arion subfuscus*; COLLINGE (127).

France:—Shells from Brides-les-Bains, Savoy; DAUPHIN (173).—*Vitrina pellucida* in cave of Tharaulx (Gard); CHABAUT, *Bull. Soc. Nimes* xxxi, p. 89.—Fauna of Maine-et-Loire completed with many n. varr., and n. spp. of *Anodonta*, *Helix*, and *Unio*; GERMAIN (249).—Note on fauna of Maine-et-Loire; GERMAIN, *C.R. Ass. Franc.* 1903, Pt. 1, p. 222; also (247).—Four shells from the Caverns of Lot; VIRÉ, *C.R. Ac. Sci.* cxxxviii, p. 826.—Fauna of department of the Orne; LÉBOUCHER & LETACQ (389).—Charente: *Unionida*, with n. spp. of *Anodonta* and *Unio*; ROCHEBRUNE (529).—List of Helices from Dieppe; GERMAIN (248).—*Limnæidæ* from the Charente, with *L. rochebruni*, n. sp.; ROCHEBRUNE (532).—Fauna of Maine-et-Loire; MAISONNEUVE (408).

Denmark:—Notes on freshwater shells; JENSEN & SELL (332).

Germany:—Review of fauna; LEHMANN (393).—Distribution of land fauna; MARTENS (424).—Schleswig: Addenda to fauna; GOLDFUSS (262).—Wurtemberg: Review of *Vitrella*, with n. spp.; GEYER (250).—Bavaria: *Valvata geyeri*, n. sp.; MENZEL (442).—Fauna of the Lower Elbe district;

PETERSEN (479).—Fauna of Eppendorfer Lake near Hamburg ; ULMER, Verh. Ver. Hamburg naturw. xi, p. 21.

Switzerland :—Few landshells above 6000 feet in Canton Valais ; COLLIER, J. Conch. xi, p. 55.

Russia :—Fauna of Kursk and Orenburg ; LINDHOLM (396).—Few shells from Ourjoum, Viatka ; KROULIKOWSKY (374).

2. Circum-Mediterranean Region.

Circum-Mediterranean :—Distribution of *Helix vermiculata* ; CAZIOT (107) : Notes on several species ; CAZIOT (102).—Shells from various localities in the Alps ; DIEM, Jahrb. St. Gall. Ges. 1901–1902, p. 234.

France :—Land shells of Verdon, Lower Alps ; MARGIER (418).—Alpes-Maritimes : n. spp. of *Amalia* and *Limax* ; POLLONERA in CAZIOT (104).

Spain :—Few shells from Moncayo ; NAVAS, Bol. Soc. Aragon. Ci. Nat. iii, p. 146.—Zaragoza : Few land shells ; BOVIO, t. c. p. 47.

Majorca :—Landshells of ; HORSLEY (309).

Corsica :—Additions to fauna with n. spp. of *Helix* and *Hyalina* ; CAZIOT (106).

Italy :—New forms of *Murella* ; KOBELT (357).—South Italy : Notes on the fauna ; KOBELT (356).—Freshwater shells of Naples and district ; BELLINI (51).

Hungary :—New species of *Fruticicola* and *Xerophila* ; LAJOS (378) : Review of *Helicidae* ; SOOS (586) : New varr. of *Clausilia*, with *C. millenaris*, n. sp. ; CSIKI (158).—Shells from near Nagyvarad, with *Melanopsis hungarica*, n. sp. ; KORMOS (368).

Croatia :—Notes on fauna ; BRUSINA (89).

Hertzgovina :—New species of *Coryna* and *Pholeoteras*, n. gen. ; STURANY (600).

Moravia :—*Hyalina cellaria* found Subterranean ; ABSOLON, Vestnik. Klub. Prostějove ii, p. 61.

Roumania :—Land and freshwater shells near Bucharest ; GAUDET, Bull. Soc. Bucarest xiii, p. 491.—List of eighteen landshells from Sinaia ; KOBELT (359).

Greece :—*Helix (Helicogena) pelagica*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Albania :—*Helix (Helicogena) oestreichi*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Turkey :—*Helix (Helicogena) frivaldszkyi, straubei*, n. spp. ; KOBELT in MARTINI & CHEMNITZ (426).

Bosphorus :—*Helix (Helicogena) antheri*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Crete :—List of land and freshwater shells, with *Clausilia holtzi*, n. sp. ; STURANY (601).

Corfu :—*Serrulina collasi*, n. sp. ; STURANY (600).

I. of Cephalonia :—List of shells from ; SANGIORGI, Atti Soc. Modena v, p. 94.

Cilicia :—*Helix (Helicogena) ciliciensis*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Jerusalem :—*Helix (Helicogena) dickhauti*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Armenia :—Few shells from Urmia Lake ; MARTENS (423).

Egypt :—*Helix (Helicogena) rueppelli*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Algeria :—*Ariunculus pallaryi*, n. sp. ; COLLINGE (128).

North-West Africa :—Fauna, with numerous varieties, and n. spp. of *Helix*, *Valvata*, and *Vaucheria* (n. gen.) ; PALLARY (466).

3. Central Asiatic Region.

Central Asia :—Land and freshwater shells, with n. varr., and n. spp. of *Cathaica* ; ANDREAE (16).—New species of *Pisidium* ; CLESSIN (120).—New species of *Buliminus* ; ROSEN (542).

Turkestan :—*Stenogyra retteri*, n. sp. ; KOBELT (362).—Western Turkestan : New species of *Cathaica* ; GUDE (273).

4. Chinese Region.

Lake Baikal :—List of a few species ; IAKHONTOV (321) : An unknown Mollusc ; KOROTNEFF (371).

China :—Notes on some shells, with n. spp. of *Eulota* and *Limnæa* from Shantung ; JONES & PRESTON (341).

Formosa :—*Stenothyra formosana*, n. sp. ; PILSBRY & HIRASE (496).

5. Japanese Region.

Japanese Empire :—New varieties, and n. spp. of *Alyceus*, *Eulota*, *Japonia*, *Kaliella*, *Macrochlamys*, *Nesopupa*, *Punctum*, *Succinea*, *Trishoplita*, and *Vertigo* ; PILSBRY & HIRASE (495) : On shells, with n. spp. of *Alyceus*, *Carychium*, *Eulota*, *Macrochlamys*, *Melania*, *Punctum*, *Tornatellina*, and *Zonitoides* ; PILSBRY & HIRASE (496) : *Plectopylis hirasei*, n. sp., Riukiu Is. ; PILSBRY (488) : Critical notes on *Clausilia* with new sections and species ; PILSBRY (494) : New forms of landshells, with n. spp. of *Alyceus*, *Chloritis*, *Cyathopoma*, *Cyclotus*, *Diplommantina*, *Eulota*, *Ganesella*, *Hirasea*, *Japonia*, *Kaliella*, *Macrochlamys*, *Microcystina*, *Opeas*, *Punctum*, *Pupa*, *Sitala*, *Trishoplita*, *Trochomorpha*, and *Zonitoides* ; PILSBRY & HIRASE (497) : *Ennea (Sinoennea) boettgeri*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

6. Atlantidean Region.

[None.]

b. PALÆOTROPICAL AFRICAN ZONE.

7. Central African Region.

Upper Nile :—A list of land and freshwater Mollusca ; HÄGG (279).

Central Africa :—New species, from various localities, of *Corbicula*, *Limax*, *Limicolaria* (sic), *Limnæa*, *Physopsis*, *Planorbis*, *Spathella*, *Subulina*, *Succinea*, *Trochonanina*, and *Vitrina* ; ROCHEBRUNE & GERMAIN (534).

Lake Tanganyika :—Critical review of the fauna, with notes on its affinities ; SMITH (575) : Origin of fauna ; HUDLESTON (314) : Notes on fauna ; GRAVIER, Bull. Mus. Paris ix, p. 347.

British East Africa :—*Limicolaria longa*, n. sp. ; PILSBRY in TRYON (619) : New species of *Ena* and *Subulina* ; SMITH (574).

German East Africa :—New species of *Pseudoglessula* ; SMITH (574).

E. Africa :—New species of *Spirotoxon* ; SIMROTH (567).

8. West African Region.

West Africa :—New species of *Limicolaria* and *Pseudachatina* ; PILSBRY in TRYON (619).

Corisco I. :—*Achatina occidentalis*, n. sp. ; PILSBRY in TRYON (619).

Cameroons :—*Varania loennbergi*, n. g. and n. sp. ; SIMROTH (567).

9. *South African Region.*

[None.]

10. *Malagasy Region.*

Nossi-Bé:—*Edentulina stumpffii*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

11. *Afro-Arabian Region.*

Abyssinia:—N. spp. of *Agriolimax* and *Atoxon* ; SIMROTH (567).

c. PALÆOTROPICAL ORIENTAL ZONE.

12. *Indian Region.*

Ceylon:—*Corilla erronea*, n. sp. ; GUDE (272): New species and varieties of *Cataulus* ; FULTON (238).

13. *Indo-Chinese Region.*

Indo-China:—Reprinted diagnoses of shells ; MORLET (450): List of Fauna ; FISCHER & DAUTZENBERG (223).

Cochin China:—*Harmandia castelneaui*, n. sp. ; ROCHEBRUNE (531).

Tonkin:—New species of *Hyriopsis* and *Unio* ; ROLLE (539).

Yunnan:—New species of *Jullienia* and *Melania* ; FULTON (241).

14. *Indo-Malay Region.*

Borneo:—*Amphidromus gossei*, n. sp. ; BARTSCH (36): Non-marine shells from Sambas, with *Amphidromus weyersi*, n. sp. ; DAUTZENBERG (174): *Opisthostoma beddomei*, n. sp. ; SMITH (576): List of some shells collected ; JONES & PRESTON (341).

Java:—New species of *Corbicula*, *Lagochilus*, *Melania*, and *Vivipara* ; BULLEN (92): New species of *Melania* ; FULTON (241).

Engano:—New species of *Trochomorpha* ; SYKES (607).

15. *Philippine Region.*

Philippine Islands:—Illustrations of some landshells ; HIDALGO (304).

d. AUSTRALIAN ZONE.

16. *Austro-Malayan Region.*

British New Guinea:—On some Helicoids, with *Euplecta pratti*, n. sp. ; GUDE (271).

Batjan:—New species of *Obba* and *Papuina* ; SYKES (607).

Gebi I.:—Shells from, with n. spp. of *Albersia*, *Leptopoma*, and *Papuina* ; FULTON (242): New species of *Papuina* and *Planispira* ; SYKES (607).

Waigiou:—*Albersia waigiouensis*, n. sp. ; SYKES (607).

Obi:—New species of *Ameria*, *Leptopoma*, *Perrieria*, and *Planispira* ; SYKES (607).

17. *Australian Region.*

Victoria :—Few landshells from near Melbourne ; ANON, Victorian Natural. xx, p. 125.

New South Wales :—*Corbicula faba*, n. sp. ; BULLEN (92).

Central Australia :—*Xanthomelon bednalli*, n. sp. ; PONSONBY (500).

Queensland :—Review of *Sphaerospira* section of *Thersites*, with *T. concors*, n. sp. ; FULTON (240).

18. *Austro-Polynesian Region.*

New Hebrides :—New species of *Melania* ; SYKES (603).

19. *Polynesian Region.*

Hawaiian Is. :—Notes on *Opeas*, with *O. henshawi*, n. sp. ; SYKES (605): Notes on *Tornatellina*, with n. spp. ; ANCEY (13): Notes on shells, with n. varr., and n. spp. of *Auriculella*, *Helicina*, *Kaliella*, *Lyropupa*, *Microcystis*, *Nesopupa*, *Succinea*, and *Vitrea* ; ANCEY (9): Several new subfossil *Succinea* from Hawaii, with notes on the deposit ; HENSHAW (297): New species of *Punctum* (Oahu), and *Vitrea* (Hawaii) and several species described as subfossil from Hawaii which may prove to be recent ; ANCEY (12): *Amastra rex*, n. sp. ; SYKES (608).

Marshall Is. :—N. spp. of *Helicina*, *Opeas*, and *Trochomorpha* ; BOETTGER (70): Of *Melania* ; BOETTGER (69).

20. *Neozelanian Region.*

New Zealand :—Notes on some shells with n. spp. of *Endodonta* and *Rhytida* ; SUTER (602): Catalogue of all the known species ; HUTTON (317): New species of *Endodonta* and *Laoma* ; WEBSTER (641): Some species of *Oncidiella* noted ; WISELL (656).

Chatham Is. :—*Oncidiella flavescens*, n. sp. ; WISELL (656).

e. NEANTARCTIC ZONE.

21. *Patagonian Region.*

Argentina :—New species of *Odontostomus* ; ANCEY (10).

22. *Chilian Region.*

[None.]

f. NEOTROPICAL ZONE.

23. *Peruvian Region.*

Peru :—New species of *Bulimulus*, *Bulimus* (?), *Nenia*, and *Systrophia* ; ROLLE (540).

24. *Colombian Region.*

Colombia :—New species of *Glandina* and *Strophocheilus* ; DA COSTA (161).

25. *Brazilian Region.*

Bolivia :—Some freshwater species, with n. spp. of *Ancylus*, *Paludestrina*, *Planorbis*, *Pyrgula* ; BAVAY (40) : *Drymæus multispira*, n. sp. ; DA COSTA (161).

Brazil :—Occurrence of *Limax variegatus* ; RIBEIRO (524) : *Strophocheilus miersi*, n. sp. ; DA COSTA (161) : *Unionida* from Goyaz ; IHERING (322) : New species of *Bulinulus* and *Odontostomus* ; ANCEY (10).

26. *Mexican Region.*

Panama :—*Neocyclotus panamensis*, n. sp. ; DA COSTA (161).

Costa Rica :—*Streptostyla costaricensis*, n. sp. ; DA COSTA (161).

Mexico :—*Spiraxis cacahuamilpensis*, n. sp. ; HERRERA, Mem. Soc. Ant. Alzate v, p. 219 [1891] : New species of *Sonorella* ; BARTSCH (35) : *Glandina lamyi*, n. sp. ; FISCHER & CHATELET (222).

New Mexico :—*Ashmunella townsendi*, n. sp. ; BARTSCH (34) : Shells, with *Ashmunella walkeri*, n. sp. ; FERRISS (218).

Lower California :—*Sonorella merrilli*, n. sp. ; BARTSCH (35) : New subsp. of *Sonorella lohrii* ; PILSBRY (489).

27. *Caribbean Region.*

[None.]

g. NEARCTIC ZONE.

28. *American Region.*

United States :—Notes on *Somatogyrrus*, with n. spp. ; WALKER (637) : New varieties of *Lymnaea* ; BAKER (26, 27).—Eastern American *Ancylus* ; WALKER (638).

Alabama : List of shells collected, with some critical notes ; HINKLEY (307) : New forms of *Polygyra* ; CLAPP (116) ; *Omphalina pilsbryi* ; CLAPP (115).—Arizona : Shells, with *Oreohelix clappi*, n. sp. ; FERRISS (218) : New species of *Sonorella* ; BARTSCH (35).—Colorado : *Agriolimax agrestis* ; COCKERELL (121) : Few shells from Pike's Peak at 10,000 feet ; COCKERELL, Nautilus xvii, p. 130.—Delaware : List of shells collected ; RHODES (523).—Florida : *Amnicola augustina*, n. sp. ; PILSBRY (486) : Northernmost habitat of *Liguus fasciatus* ; MOORE (449).—Indiana : Fauna of Cedar Lake ; BAKER (25) : Range of *Polygyra tridentata* var. *discoidea* ; DANIELS, Nautilus xviii, p. 92.—Iowa : Shells from near Des Moines ; HYNING, Nautilus xvii, p. 130.—Maine : Landshells of Ironbound Island ; BLANEY (59) : Landshells of Mt Desert ; COLTON (132).—Massachusetts : Few shells from Cape Cod ; JOHNSON (338).—New England : *Helix hortensis* ; WINKLEY (654).—New York : *Arion circumscriptus* at Niagara Falls ; COCKERELL, Nautilus xviii, p. 91.—Pennsylvania : *Margaritana margaritifera* ; CONNER (136).—Wisconsin : Collection of shells from ; BAKER (29).—Bermuda : Post tertiary landshells, some of which may be recent ; GULICK (274) : Few landshells ; DAVIS (181).

29. *Californian Region.*

West America :—Popular account of fauna, with systematic list ; KEEP (345).

California :—*Sonorella fisheri*, n. sp. ; BARTSCH (35) : *Limax maximus* ; BARTSCH, Nautilus xviii, p. 12 : *Limax maximus* ; VANATTA, t. c. p. 23 : *Limax maximus* and other slugs ; STEARNS (593).

30. *Canadian Region.*

Canada :—Additions to fauna ; WALKER, *Ottawa Natural*. xviii, p. 18.—
Ottawa : Occurrence of *Margaritana deltoidea* ; F. R. L., t. c. p. 91.

Alaska :—*Lymnæa randolphi*, n. sp. ; BAKER (27).

Newfoundland :—Occurrence of *Helicigona arbustorum* ; WHITEAVES,
Ottawa Natural. xvii, p. 192.

MARINE MOLLUSCA. [For Non-Marine, see p. 41.]

European Seas :—Review of *Ostrea* ; LOCARD (398).

Study of fauna of European Seas continued ; KOBELT (355).

Supplement to Mollusca of 'Porcupine' Expeditions commenced, with
n. spp. of *Cylichna* and *Retusa* ; SYKES (604).

1. *Arctic Province.*

Polar Sea :—*Pecten frigidus*, n. sp. ; JENSEN (333).

Jan Mayen :—*Portlandia kolthoffi*, n. sp. ; HÄGG (277).

Greenland :—Some species quoted ; HÄGG (277).

Spitzbergen :—Supplement to Mollusca collected by Russian Expedition ;
KNIPOWITSCH (353) : List of some species ; HÄGG (277).

2. *Boreal Province.*

North Atlantic :—*Spirialis retroversus* ; OSTENFELD & PAULSEN, *Medd.*
Gronland xxvi, p. 169.

Norway :—*Enteroxenos ostergreni*, apparently n. gen. and sp. ; BONNEVIE
(76).

3. *Celtic Province.*

North Sea :—Acclimatization of *Petricola* ; PELSENEER, C.R. Ass. Franc.
1903, pt. i, p. 223

British Isles :—Lancashire : Marine shells from Fleetwood ; JACKSON,
J. Conch. xi, p. 115.—*Barnea candida* on Wirral Peninsula ; STANDEN,
t. c. p. 49.—Review of fauna of Plymouth District ; MARINE BIOLOGICAL
ASSOCIATION (419).—Suffolk : List of Fauna ; GREENE (266).—Few shells
from Tetley Lock, Lincs. ; CASTLE, *Naturalist* 1904, p. 254.—Occurrence
of *Crepidula* in Whitstable Bay ; SAUNDERS, *Rep. East Kent Soc.* i, p. 45.
—*Ostrea angulata* on East Coast ; PLOWRIGHT, *Tr. Norfolk Soc.* vii, p. 753.
Northumberland : Species new to the coast ; LEBOUR (390).—Marine
shells from Achill ; MASSY, *Irish Natural.* xiii, p. 44.—Shells from Raghly ;
CHASTER (110).

Scilly Isles :—Few shells mentioned ; VALLENTIN, *J. Inst. Cornwall* xvi,
p. 129.

4. *Lusitanian Province.*

Atlantic Ocean :—Collection of Heteropoda, with n. spp. of *Cardiropoda*,
Carinaria, *Firola*, and *Firoloida* ; VAYSSIÈRE (627).

Channel Is. :—Addenda to fauna ; MARQUAND (420).

France :—*Synapticola perrieri*, n. gen. and sp. ; MALARD (410).—Gulf of
Gascony : Two or three shells dredged ; GRUVEL, *Pr. verb. Soc. Sci.*
Bordeaux 1897, p. 248.—Wimereux : *Doris giardi*, n. sp. ; ABRIC (3).—
Gulf of Marseilles : *Madrella aurantiaca*, n. sp. ; VAYSSIÈRE (629) :
Archidoris stellifera, n. sp. ; VAYSSIÈRE (628).—Arcachon : On some
Nudibranchs ; CUENOT (159).

Portugal:—Review of *Patellidæ*, Polyplacophora, and Scaphopoda; NOBRE (455).

Mediterranean:—List of shells from Llansa; MALUQUEZ Y NICOLAU (411): Notes on shells, with n. varr., and n. spp. of *Cyclonassa*, *Mitra*, and *Mytilus*; PALLARY (468): Notes on Cephalopods; JATTA (330).

Adriatic:—*Cerithium sykesi*, n. sp.; BRUSINA (89).

Capri:—Fauna near; LO BIANCO (397).

Black Sea:—Some shore forms; HAAPT (282).

Algiers:—Occurrence of *Natica prietoi*; ANCEY (11).

Gulf of Gabes:—Fauna, with supposed n. varr. and subspp., and n. spp. of *Clathromangilia* (?), *Eulima*, *Ginnania*, *Homotoma*, *Mangilia*, *Megaxinus*, *Philbertia*, *Retusa*, and *Turbonilla*; PALLARY (467).

5. Aralo-Caspian Province.

On the fauna; SOWINSKY (590).

6. West African Province.

West Africa:—List of shells from Rio de Oro; FONT Y SAGUÉ (230): *Chlamys weberi*, n. sp.; BAVAY (39).

Sierra Leone:—*Cardita umbonata*, n. sp.; SOWERBY (588).

St Helena:—*Helenella insolens*, n. gen. and sp.; CASEY (98).

Ascension I.:—*Marginella robusta*, n. sp.; SOWERBY (588).

7. South African Province.

South Africa:—New species of *Arca*, *Cardita*, *Cardium*, *Chlamys*, *Crassatella*, *Crenella*, *Cuspidaria*, *Nucula*, *Nuculana*, *Poromya*, *Tellina*, and *Venus*; SOWERBY (589).

Cape Colony:—List of shells from Port Alfred, with notes, and n. spp. of *Ampullarina*, *Ancilla*, *Bullia*, *Cardita* (?), *Carditella*, *Clathurella*, *Cultellus*, *Cynisca*, *Drillia*, *Ethalia*, *Eulima*, *Eulimella*, *Fusus*, *Glyphostoma*, *Hochstetteria*, *Lepton*, *Lima*, *Limopsis*, *Lucina*, *Mangilia*, *Marginella*, *Modiola*, *Nassa*, *Natica*, *Purpura*, *Rissoa*, *Rissoina*, *Semele*, *Tellinmya*, *Tellina*, *Terebra*, *Theora*, *Trifora*, and *Turbonilla*; SMITH (578).

Natal:—*Sepia burnupi*, n. sp.; HOYLE (311).

8. Indo-Pacific Province.

E. Africa and Zanzibar:—On Nudibranchiata, with n. spp. of *Archidoris*, *Fracassa*, *Halgerda*, *Peltdoris*, *Platydor*, *Sclerodor* (n. gen.), *Staurodor*, *Thordissa*, *Trippa*; ELIOT (208): n. spp. of *Chromodor*; ELIOT (209): n. spp. of *Bornella*, *Marionia*, *Nembrotha*, *Notodor*, *Pleuroleura*, *Trevelyana*; ELIOT (210).

Red Sea:—*Hexabranchus plicatus* and *Notarchus brevipes*, n. spp.; HÄGG (278).

Gulf of Oman:—New species of *Aclis*, *Daphnella*, *Eulima*, *Mangilia*, *Oscilla*, and *Rissoina*; MELVILL (438): New species of *Basilissa*, *Bittium*, *Cerithium*, *Clathurella*, *Cyclostrema*, *Cylichna*, *Daphnella*, *Ethalia*, *Mangilia*, *Mucronalia*, *Pleurotoma*, *Retusa*, *Scissurella*, *Trifora*, and *Turbonilla*; MELVILL (436).

Persian Gulf, &c.:—Review of *Cypreidæ*; MELVILL & STANDEN (440): New species of *Acteon*, *Mangilia*, and *Mitra*; MELVILL (436): New species of *Aclis*, *Ancistrogrin*, *Bullia*, *Clathurella*, *Columbella*, *Cyclostrema*, *Eulimella*, *Fenella*, *Fossarus*, *Lotorium*, *Mangilia*, *Philine*, *Rissoa*, *Scala*,

Syrnola, and *Turbonilla*; MELVILL (433): New species of *Eulimella*, *Odostomia*, *Omphalius*, and *Turritella*; MELVILL (438).

Arabian Sea:—*Muniola carbacea*, n. sp.; MELVILL (438): New species of *Eulimella* and *Pleurotoma*; MELVILL (433).

Bay of Bengal, &c.:—Deep Sea shells, with n. spp. of *Acmaea*, *Anatina*, *Atys*, *Capulus*, *Chiton*, *Clathurella*, *Cylichna*, *Drillia*, *Lacuna*, *Myrina*, *Pecten*, *Pleurotoma*, *Psammobia*, *Scaphander*, *Vesicomya*, and *Xylophaga*; SMITH (579).

Pacific Ocean:—*Peronodoris cancellata*, n. gen. and sp., and *Tritonia incerta*, n. sp.; BERGH (52).

Calcutta:—*Nassa gangetica*, n. sp.; PRESTON (502).

Ceylon:—New species of *Clathurella*, *Coralliophila*, *Cythara*, *Maetra*, *Macronalia*, *Murex*, *Nassa*, *Styloptygma*, and *Thala*; PRESTON (502): Cephalopods, with n. spp. of *Polypus*; HOYLE (313).

Singapore:—New species of *Odostomia* and *Turbonilla*; DALL & BARTSCH (172).

Borneo:—List of some shells collected; JONES & PRESTON (341): *Modiola sambasensis*, n. sp.; DAUTZENBERG (174).

East Indies:—A collection of Gymnosomata and Thecosomata, with n. spp. [cf. last year's Record for names]; TESCH (610).

Celebes:—*Amussium sibogai*, n. sp.; DAUTZENBERG & BAVAY (176).

China Sea:—*Chlamys ambiguus*, n. sp.; BAVAY (39): *Linguella variolosa*, n. sp.; BERGH (52): *Dolium magnificum*, n. sp.; SOWERBY (587): List of some Mollusca, with n. spp. of *Assimineia* and *Pecten*; JONES & PRESTON (341).

Philippines, Iolo, and Marianes:—Fauna commenced; HIDALGO (305).

Philippines:—*Murex multispinosus*, n. sp.; SOWERBY (587): *Lophiotoma microsticta*, n. gen. and sp.; CASEY (98).

Pacific Ocean:—*Chlamys cythereus*, n. sp.; BAVAY (39).

Hawaiian Islands:—*Cassia fortisulcata*, n. sp.; SMITH (573): Unnamed species of *Proneomenia* and *Rhopalomenia*; HEATH (287).

Pacific Is.:—Some species of Chitons enumerated and discussed; WISELL (656).

Temoe:—Notes on *Meleagrina*; SEURAT (555).

Marquesas Is.:—*Cirrobrachium filiferum* and *Rhynchoteuthis chuni*, n. sp.; HOYLE (312).

New Caledonia:—*Chlamys wilhelminae*, n. sp.; BAVAY (39).

9. Australo-Zealandic Province.

Southern Australia:—Distribution of fauna explained by a former isthmus across Bass' Straits; HEDLEY (291).

South Australia:—Notes on shells, with n. spp. of *Cancellaria*, *Cassidea*, *Nacella*, and *Stephopoma*; VERCO (630).

New South Wales:—Addenda to fauna, with critical notes, and n. spp. of *Atys*, *Capulus*, *Chione*, *Dacrydium*, *Daphnella*, *Epigrus*, *Philobrya*, *Phos*, *Rissoa*, *Stiva* (n. gen.), *Strebloceras*, and *Thraciopsis*; HEDLEY (292).

Victoria:—List of fauna continued; PRITCHARD & GATLIFF (505): New species of *Cyclopecten* and *Tellina*; PRITCHARD & GATLIFF (506).

Tasmania:—New species of *Daphnella* and *Philippiella*; HEDLEY (292): *Alloidoris marmorata*, n. gen. and sp., and *Discodoris dubius*, n. sp.; BERGH (52).

New Zealand:—On shells, with n. spp. of *Circum*, *Couthouyia*, *Eulima*, *Leiostraca*, *Liotia*, *Pleurodon*, *Puncturella*, *Rissoa*, *Schismope*, *Scissurella*, and *Verticipronus* (n. gen.); HEDLEY (293): Catalogue of all the known species; HUTTON (317): N. spp. of *Archidoris* and *Homoiodoris*; BERGH (52): *Onithochiton marmoratus*, n. sp.; WISELL (656).

10. *Japonic Province.*

Japan :—Notes on Gastropods, with new forms, and n. spp. of *Cerithium*, *Clathurella*, *Collonia*, *Columbella*, *Cyllene*, *Daphnella*, *Drillia*, *Euchelus*, *Fusus*, *Mangilia*, *Mitra*, *Ocenebra*, *Parviterebra* (n. gen.), *Polinices*, *Purpura*, *Rissoa*, *Rissoina*, *Siphonaria*, *Terebra*, *Thala*, *Tornatina*, *Tritonidea*, *Trochus*, and *Turbonilla*; PILSBRY (492): Notes on Pelecypods, with new forms, and n. spp. of *Arca*, *Cardium*, *Chione*, *Kellia*, *Mactra*, *Ostrea*, *Pitar*, *Spisula*, and *Tellina*; PILSBRY (493): New species of *Chlamys*; BAVAY (39): *Cuthona* (?) *bicolor*, n. sp.; BERGH (52).

11. *Aleutian Province.*

Alaska :—*Limifossor talpoideus*, n. gen. and n. sp. of Amphineura; HEATH (287).

Kuril Is. :—New species of *Buccinum*; PILSBRY (490).

12. *Californian Province.*

West America :—Popular account of fauna, with systematic list; KEEP (345): Origin of fauna; SMITH (581).

N. America, West Coast :—*Melibe pellucida*, n. sp.; BERGH (52).

California :—*Odostomia americana*, n. sp.; DALL & BARTSCH (172): *Dentalium vallicolens*, n. sp.; RAYMOND (512): *Coryphella californica*, n. sp.; BERGH (52): *Periploma sulcata*, n. sp.; DALL (169): New species of *Pleurotoma*; RAYMOND (513).—List of shells dredged off Santa Catalina Island; LOWE (402).

13. *Panamic Province.*

Central America :—*Chiton angustus*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (426).

Panama :—N. spp. of *Froekenia*, *Stauroteuthis*, and *Tremoctopus*; HOYLE (312).

Mexico :—*Loligo diomedea*, n. sp.; HOYLE (312).

Colombia :—*Chiton soverbyanus*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (426).

Galapagos Is. :—*Mastigoteuthis dentata* and *Polypus oculifer*, n. spp.; HOYLE (312).

14. *Peruvian Province.*

Chile :—*Chiton glaber*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (426).

15. *Antarctic Province.*

On the distribution of the Antarctic fauna; PELSENER (475).

Magellan Region :—List of sp. of *Trophon*, with 14 n. spp.; STREBEL (599).

Falkland Islands :—Notes on fauna; VALLENTIN (623).

16. *Argentine Province.*

[None.]

17. *Caribbean Province.*

Brazil :—*Fusus brasiliensis*, n. sp.; GRABAU (265).

18. *Transatlantic Province.*

Florida :—*Pyramidella dodona*, n. sp. ; DALL & BARTSCH (172).

Maine :—Notes on shells from Frenchman's Bay ; BLANEY (58).

Massachusetts :—Few shells from Cape Cod ; JOHNSON (338).

Bermudas :—Notes on fauna, with n. spp. of *Dolabrifera*, *Elysia*, *Facelina*, *Lamellidoris*, *Placobrachopsis*, *Runcina*, and *Tethys* ; VERRILL (631) : Notes on fauna with n. varr., and n. spp. of *Cerithium* and *Gastrochaena* ; DAVIS (181).

GEOLOGICAL.

N.B.—The remarks given at the beginning of the preceding section, p. 37, also apply here.

Classification of several Families of Gastropoda, with new genera, sections, and species ; COSSMANN (140).—Catalogue, with critical notes, of DeFrance collection ; BIGOT & MATTE (54).—Revision of Cephalopoda of Strachey collection ; CRICK (155).—On genera *Actinocamax* and *Atractilites* ; CRICK (156).—Review of fossil *Vermetidae*, with n. spp. ; ROVERETO (544).—Notes on *Orthoceras* ; JAEKEL, Zeitschr. Deutsch. geol. Ges. lv, Protok. p. 67.—Note on type of *Aviculopecten* ; HIND, Amer. Geol. xxxiv, p. 200 ; GIRTY, t. c. p. 332 ; GIRTY (257).—Types of several species figured, with notes ; PALAEONTOLOGIA UNIVERSALIS (464).

Lists of fossils from Belfast ; LAMPLUGH, &c., Geology...Belfast. Mem. geol. Surv. Ireland.—Few fossils from Calabria ; STEFANO, Mem. Carta geol. Ital. ix, App.—Lists of fossils from French Pyrenees ; ROUSSEL, Bull. Carte geol. France xv, p. 23.—Lists of fossils from various formations of Lot, Aveyron, Tarn, and Tarn-et-Garonne ; THEVENIN, Bull. Carte geol. France xiv, p. 353.—Fossils from various Danish formations ; USSING, Danmarks geol. Unders. iii, No. 2.—Fauna of the Peninsula of Taman ; ANDRUSOW (17).

1. POST-TERTIARY.

Specific identity of *Vivipara diluviana* and *clactonensis* ; KENNARD & WOODWARD (348).

British Isles : List of shells from gravel at Dumball Island ; BOLTON (74).—Shells from Cleve Hill ; HINTON & KENNARD (308).—Holocene shells from Totland Bay ; KENNARD & WARREN (347).—Infra-glacial landshells from near Bridlington Quay ; LAMPLUGH (379).—Landshells in infra-glacial Chalk-rubble near Bridlington ; LAMPLUGH, Rep. Brit. Ass. 1903, p. 659.—Few shells from excavation near Watford ; LONES, Tr. Hertfordsh. Soc. xii, p. 17.—List of shells from gravel pit at Swanscombe, Kent ; STOPES (597).

Iceland :—Post-Tertiary fossils ; JENSEN (334).

Sweden :—Post-Tertiary shells ; KURCK (376).—Fossils from Uddevalla ; LINDSTROM, Sveriges geol. Unders. Afh. Ser. Ac, No. 3 : BLOMBERG, op. cit. No. 4.

Denmark :—*Ostrea edulis* ; NORDMANN (458).—Post-Tertiary fossils from Havbunden ; NORDMANN (457).

Germany :—Tertiary fossils in diluvial of Pommern ; DEECKE (184).—Few Post-Tertiary shells from Dingelstädt ; NAUMANN, Erlaut. Geol. Karte Preussen 112, Abt. 55, No. 42, p. 46 : also from Lendenfeld ; KAISER, op. cit. No. 48, p. 41.—Few fossils from Frankfurt ; FISCHER (224).—Diluvial freshwater shells from Holstein ; GAGEL, Jahrb. geol. Landesanst. Berlin xxii, p. 293.—Pre-glacial marine fossils in East Germany ; MAAS, Zeitschr. Deutsch. geol. Ges. lvi, Mt. p. 21.—*Valvata andreana* ; MENZEL (442).—Diluvial fauna of Lubeck ; RANGE (510).—Pleistocene fossils from Saxony ; WÜST (664).

France :—Quaternary shells near Paris ; BÉDÉ (44).—Quaternary shells from Arrest (Somme) ; BÉDÉ & VINCHON (46).—Quaternary fossils near Nice ; DEPÉRET & CAZIOT (188).—Fauna of strata in Department of Aude ; DONCIEUX (196).

Spain :—Quaternary fossils from the plain of San Juan de Vilasar ; ALMERA (7).

Italy :—Neogene fauna of Gulf of Naples ; BELLINI (50).—Post-pliocene marine shells from Calabria, with n. spp. ; CREMA (150).—Post-Tertiary marine shells from Nettuno ; MELI, Boll. Soc. geol. Ital. xxiii, p. xxxvi.

Austria :—Landshells with *Elephas* near Vienna ; TROLL, Verh. geol. Reichsanst. 1904, p. 244.

Hungary :—Post-Tertiary shells ; HANDMANN, Verh. geol. Reichsanst. 1903, p. 343.—*Succinea oblonga* in diluvial ; KORMOS (369).

Moravia :—Few diluvial landshells ; KNIES, Vestnik. Klub. Prostejove iv, p. 78.

Turkey :—Fossils from Dardanelles ; NEWTON (454).

Russia :—Post-Tertiary fossils from the basin of the Manytch ; BOGATSCHEW, Mem. Com. geol. St. Petersb. xxii, pp. 73, 609.—Fossils from Lublin ; KRISHTAFOVICH, Annuaire geol. Min. Russ. vii, p. 95.—Fossils from district in sheet 16 of map of Russia ; TOUTKOVSKY, Mem. Com. geol. St. Petersb. xxii, p. 516.

Japan :—Diluvial fossils from Shimosa ; N. K., J. geol. Soc. Tokyo xi, p. 491.

Polynesia :—Shells from deposits on Hawaii, with n. spp. of *Succinea* ; HENSHAW (297) : see also ANCEY (12).

Africa :—New variety of *Murex trunculus* from Tunis ; BÉDÉ (42).—Few Quaternary shells from Sfax, Tunis ; BÉDÉ (43).—List of fossils from Raised Beach in Tunis ; FLICK & PERVINQUIÈRE (229).—List of Post-Tertiary fossils from Algerian Coast ; LAMOTHE, Bull. Soc. geol. France iv, p. 29 ; see also pp. 40 & 41.—Post-Tertiary marine shells from South Africa ; JOHNSON (340).

North America :—Pleistocene fauna of Sankaty Head, Mass. ; CUSHMAN, Amer. Geol. xxxiv, p. 169.—Note on freshwater shells in American Loess ; SHIMEK, Bull. geol. Soc. Amer. xv, p. 576.—Notes on fossils of North American Loess ; SHIMEK (557).

Bermuda :—Landshells, with n. spp. ; GULICK (274).

2. TERTIARY.

Teredo fistula, Lea, is a *Teredina* ; JOHNSON (337).—Review of the *Gisortia* section of *Ovula* ; MAYER EYMAR (428).—New species from Lower Tertiary ; MAYER-EYMAR (427).—Notes on phylogeny of *Fusus* and allies with n. spp. ; GRABAU (265).—New variety of *Planorbis multiformis* ; KORMOS (370).—*Poroleda tatei*, n. n. ; HEDLEY (295).—Notes on *Orygoceras fuchsi*, Pannonian ; LÖRENTHEY, Foldtani Kozl. xxxiii, p. 518.—Fossils from Western Jura ; SCHMIDT, Centrbl. Mineral. 1904, p. 609.

Greenland :—Fossils from East Greenland ; RAVN (511).

Germany :—Shells near Oppeln ; MICHAEL, Jahrb. geol. Landesanst. Berlin xxii, p. 372.—Miocene fossils from near Unter- und Oberkirchberg ; KRANZ, Centrbl. Mineral. 1904, pp. 481, 528, 545.—Miocene land fauna of Oppeln, with n. spp. ; ANDREAE (15).—Few fossils from Frankfurt ; FISCHER (224).—Miocene fauna of three localities in Mecklenburg ; METZ-MACHER (446).—*Clausilia fischeri*, n. sp., from Upper Oligocene of Hochheim ; BOETTGER (64).—Notes on *Emmericia* with a n. sp. from Frankfurt ; BOETTGER (65).

Belgium :—Abundance of *Rostellaria ampla* near Uccle ; DELHEID (186).

France :—Illustrations of all the Fauna of the Paris Basin commenced ; COSSMANN & PISSARRO (144).—Fauna of the Faluns of Haguineau ; COUFFON (146).—Miocene fauna of Remies ; DOLLFUS (193).—New species of Gastropods from Paris Basin ; CHÉDEVILLE (112).—List of Paris Basin fauna continued ; CHÉDEVILLE (111).—N. spp. of *Rimella*, *Cyprea*, *Siphonalia*, *Fusus* from the Paris Basin ; CHÉDEVILLE (113).—Additions to Pelecypod fauna of Cotentin, with n. spp. ; COSSMANN & PISSARRO (145).—Freshwater forms from Loire Basin ; DOLLFUS (194).—Lower Miocene Fauna of Loire Basin continued, with n. spp. of Pelecypoda ; DOLLFUS & DAUTZENBERG (195).—List of marine shells from Saint-Gobain (Ypresian) ; LHOMME (395).—Thanetian fossils from Berru ; MOLOT (448).—Fauna of strata in Department of Aude ; DONCIEUX (196).—Eocene and Oligocene fauna of Languedoc, with n. spp. ; ROMAN (541).—Pliocene fossils near Nice ; DEPÉRET & CAZIOT (188).—List of shells of the Redonian of Ille-et-Vilaine ; PEYROT (483).—Few fossils from Haguineau ; COUFFON, Bull. Soc. Angers xxxiii, p. 54.—Note on *Scutellidae* of Gironde ; FALLOT, Pr. verb. Soc. Linn. Bordeaux 1902, p. 3.—Pelecypods from Loire-Inférieure with many n. spp., and *Choniocardia*, n. subgen. ; COSSMANN (143).

Portugal :—On fauna with n. spp. ; DA COSTA (160).

Switzerland :—List of fossils from near St Gallen ; FALKNER & LUDWIG (217).

Italy :—Few shells from Santerno ; SANGIORGI, Riv. ital. Pal. x, p. 77.—Supplement to fauna of Piedmont and Liguria, with index ; SACCO (546).—Miocene fossils from Tagliacozzo ; LUPI, Boll. Soc. geol. Ital. xxiii, p. xxviii. Pliocene fossils from Capitanata ; CHECCHIA-RISPOLI, t. c. p. 292.—Miocene fossils from Capitanata ; CHECCHIA-RISPOLI, t. c. pp. 295, 298.—On forms of *Lucina* from Catania ; STEFANO (594).—*Fusus contrarius* in Pliocene of Catania ; FUSCO (244).

Austro-Hungary :—Species of *Melanopsis* from Nagyvarad ; KORMOS (370).—Occurrence of *Pyrgulifera* at Labatlan ; LÖRENTHEY, Foldtani Kozl. xxxiii, p. 524.—Few Lower Miocene shells from Braunkohlen ; SCHLOSSER, SB. Ak. Wien cxi, Abth. i, p. 1123.—Few Sarmatian fossils from Szaszvaros ; HALAVATS, Jahresber. Ungarn geol. Anstalt. 1901, p. 108.—‘Congerienfauna’ of Leobersdorf and neighbourhood ; HANDMANN (281).—Illustrations of Tertiary fossils, many apparently being new, from Hungary, &c. ; BRUSINA (88).—Pelecypods from Häring in Tirol, with n. spp. ; DREGER (197).—Lower Oligocene fauna of Przemyśl, with n. spp. ; WOJCIK (657).—Notes on fossils from Moravia ; RZEHAŁ, Verh. Ver. Brunn xli, p. 34.—Pteropoda from Budapest ; LÖRENTHEY (400).

Moldavia :—Fossils from North Moldavia ; SIMIONESCU, Publ. Ac. Romana vii & ix : also (564).

Montenegro :—Middle Miocene fossils with *Radula martelli*, n. sp. ; NELLI, Boll. Soc. geol. Ital. xxiii, p. 149.—Miocene fossils, with n. sp. of *Pecten* ; VINASSA DE REGNY, t. c. p. 307.

Dalmatia :—Eocene fossils, with n. spp. ; DAINELLI (164).—Middle Eocene fossils from Ostrovisa ; DAINELLI (163).

Turkey :—Fossils from Dardanelles ; NEWTON (454).

Russia :—Some fossils from Kriwoi Rog (Jekaterinoslaw) ; FAAS, Trudui geol. Kom. n. s. 10.—Fauna of district of Saratov, with n. spp. ; ARKHANGHEL'SKII (22).—Middle Miocene fauna of Volhynia ; LASKAREW (387).—Middle Miocene fauna of Tomakowka, with n. spp. ; MIKHAILOVSKY (447).—Miocene fossils from Temir-Khan-Choura ; KALITSKY, Mem. Com. geol. St Petersburg. xxii, p. 33.—Fossils from River Sal ; BOGATCHEW, t. c. p. 562.

Asia :—Three n. spp. of Pliocene (?) Cones from Japan ; PILSBRY (492) : one renamed ; PILSBRY, P. Ac. Philad. 1904, p. 550.—Fossils from Hitachi Province ; JIMBO, J. geol. Soc. Tokyo xi, p. 399.—Fossils from Asiatic Russia ; JIMBO, t. c. p. 222.—Fossils from Ferghana ; BÖHM (61).

Africa :—Lower Miocene shells between Cairo and Suez ; BARRON (33).—Few Lutetian fossils from the Soudan ; LAPPARENT, C.R. Ac. Sci. cxxxix, p. 1186.—Fossils, probably Eocene, from Kamerouns, with n. spp. ; OPPENHEIM (460).

North America :—*Ostrea arrosis*, n. sp., Alabama ; ALDRICH (6).—*Genota riversiana*, n. sp., California ; RAYMOND (514).—*Turbinella (Psilocochlis*, n. subgen.) *mcCallie*, n. sp., Georgia ; DALL (170).—New species of *Cancellaria* and *Linearia* (?) from the United States ; JOHNSON (336).—Eocene fauna of Maryland, with n. spp. ; CLARK & MARTIN (117).—Miocene fauna (except Pelecypoda) of Maryland, with n. spp. ; MARTIN (425) : Pelecypod fauna, with n. spp. ; GLENN (259).—Few Lower Miocene fossils from California ; MERRIAM (444).

South America :—Few fossils from Patagonia ; TOURNOUER, Bull. Soc. geol. France iii, p. 463.—Fauna of strata of Quiriquina I., with n. genn. and n. spp. ; WILCKENS (652).

Australasia :—Shells from Happy Valley, near Adelaide, with n. sp. of *Septifer* ; BASEDOW (37).—Eocene fossils from Cape Patton, Victoria ; DENNANT, Rec. Geol. Surv. Victoria i, p. 36.—Miocene fossils from Horsham, Victoria ; DENNANT, t. c. p. 37.—Catalogue of Fauna of Victoria, South Australia, and Tasmania ; DENNANT & KITSON (187).—Fossils from the Barwon Valley, Victoria ; HALL & PRITCHARD (280).—New species of Gastropods from the older Tertiary of Victoria ; PRITCHARD (504).

3. SECONDARY.

Notes on *Ammonites plicatus* and *biplex* ; BLAKE (57).—Secondary species of *Inoceramus*, with a new species ; ATRAGHI (5).—On *Lithiotis*, with *Cochlearites*, n. gen. ; REIS (518).—Secondary fossils from Rokycan ; ISERLE (324).—Fossils from Sarajevo, with n. spp. ; KITTL (352).—Fossils from Madagascar ; DOUVILLÉ, Bull. Soc. geol. France iv, p. 207.—Two Cephalopods from North-West India ; CRICK (155).

Cretaceous :—An Endophyte found in a Cretaceous Bivalve ; ETHERIDGE (215).—On Senonian, Danian, and Turonian *Hippurites*, with n. spp. ; TOUCAS (617).—Upper Chalk fossils from Northern Alps ; SCHLOSSER, Centrbl. Mineral. 1904, p. 654.

British Isles :—Few Molluscs from North Lincolnshire ; BURNET, Geol. Mag. i, p. 172.—Note on *Actinocamax* of Flamborough Head ; CRICK (156).—Few Upper Gault fossils from Barnwell ; FEARNSIDES, Quart. J. Geol. Soc. lx, p. 360.—Cretaceous fossils near Scarborough ; FOX-STRANGWAYS (232).—Few fossils from near Croydon ; HINDE, Geol. Mag. i, p. 482.—Fossils from near Merstham and Croydon ; HOLMES, P. Croydon Club 1904, p. 45.—Lists of English fauna ; JUKES-BROWNE (343).—Fossils of junction beds with Lias at Charmouth ; LANG, Geol. Mag. i, p. 124.—Lists of fossils from Yorkshire Coast ; ROWE (545).—Review of British *Limidæ*, with n. spp. ; WOODS (659).

Germany :—Lower Chalk Ammonites of Helgoland, with n. spp. ; KOENEN (366).—Saxony, list of fossils from ; PETRASCHECK (481).—*Aucella keyserlingi* from Neocomian of Achim ; WOLLEMAN, Zeitschr. Deutsch. geol. Ges. lv, Mt. p. 34.—Lower Senonian of Brunswick ; WOLLEMAN, Centrbl. Mineral. 1904, p. 33.—Senonian fossils from Königslutter ; WOLLEMAN (658).

France :—Lists of fossils from Sainte Ménéhould ; COLLET (122).—New species from France ; COSSMANN (141).—Fossils from the Corbières ; GROSSOUVRE (270).—Few Cenomanian fossils from Saint-Jouin ; NIBELLE, Bull. Soc. Rouen xxxix, p. 177.

Spain :—Some Spanish forms mentioned ; MALLADA, Mem. Com. geol. Espana v.

Switzerland :—Lower Cretaceous fauna of Western Swiss Jura ; BAUMBERGER (38).—Few Gault and Urgonian fossils from near Bregentz ; STIZENBERGER, *Eclog. geol. Helvet.* viii, p. 221.

Italy :—Few Urgonian fossils from Capri ; PARONA, *Atti Acc. Lincei* xiii, pt. 1, p. 165.—Occurrence of *Biradiolites* near Schio ; PARONA (470).

Austro-Hungary :—Lists of fossils from Eastern Bohemia ; JAHN (328).—Senonian fossils from River Aranyos ; PALFY, *Jahresber. Ungarn geol. Anstalt* 1901, p. 79.—Cenomanian fossils from Bohemia ; JAHN, *Verh. geol. Reichsanst.* 1904, p. 297.—Two new species of *Inoceramus* from Siebenburgen ; PALFY (465).—Few fossils from East Bohemia ; PETRASCHECK, *Verh. geol. Reichsanst.* 1904, p. 59.—Fauna of Urmos (Transylvania), with n. spp. ; SIMIONESCU (563).—Neocomian Fauna from the South Carpathians, with n. spp. ; SIMIONESCU (561).—Few fossils from the Iser Region ; ZAHÁLKA, *SB. Bohmisch. Ges.* 1903, No. xxxii.

Poland :—Wealdian and Neocomian fossils from Poland ; MICHALSKI, *Mem. Com. geol. St Petersburg.* xxii, p. 339.

Asia :—Fossils from Ferghana ; BÖHM (61).—Species of *Eurydesma* from the Salt Range ; KOKEN (367).—Fossils from between Cretaceous and Jura of Sula Is., with n. spp. ; BOEHM (60).—New Cephalopoda from the Hokkaido ; YABE (665).

Africa :—Few fossils from Madagascar ; BOULE & THEVENIN, *Bull. Soc. geol. France* iii, p. 435.—Fossils from Somaliland, with n. spp. ; DACQUÉ (162).—Fauna of deposit at Umkwelane Hill, Natal, with n. spp. ; ETHERIDGE (211).—On fauna of Egypt, with n. spp. ; FOURTAU (231).—Few fossils from the Sahara ; HAUG, *C.R. Ac. Sci.* cxxxviii, p. 1529.—Fauna from Kameruns, with n. spp. of Cephalopods ; SOLGER (585).—New species of *Pseudocucullæa*, n. gen., from the Kameruns ; SOLGER (584).

America :—New forms of Molluscs from Argentina, with *Pseudotyllostoma*, n. gen. ; IHERING (323).—Fossils from Rio Negro, with n. sp. of *Gryphæa* ; BÖHM, *Zeitschr. Deutsch. geol. Ges.* lv, Protok. p. 71.—Collection of Ammonites from Texas, with n. spp. ; LASSWITZ (388).—Laramie Group : *Parreysia barnumi*, n. n. for *Unio browni*, Whitf. ; PILSBRY, *Nautilus* xviii, p. 12.—Few fossils from Arizona ; STANTON in RANSOME, *Pap. U. S. Geol. Survey* xxi, p. 70.—Six new species of *Unio* from the Laramie Group ; WHITFIELD (630).—Few fossils from Upper Chalk of South Patagonia ; WILCKENS, *Centrbl. Mineral.* 1904, p. 597.

Australasia :—Occurrence of *Ptychoceras* and other n. spp. in Northern Territory of South Australia ; ETHERIDGE (213).—Notes on Australian fossils with n. spp. ; ETHERIDGE (214).

Jurassic :—Notes on some species of Ammonites ; HEALEY (284).

British Isles :—Review of *Hildoceratidae* of British Isles with n. gen. and n. spp. ; BUCKMAN (90).—Few fossils from Portland series at Haddenham ; DAVIES, *P. Geol. Ass.* xviii, p. 385.—Fossils from Scarborough ; FOX-STRANGWAYS (232).—Lower Oolite forms near Bristol ; TUTCHER (621).—Oolite fossils from Cheltenham ; RICHARDSON (526).

East Greenland :—Fossils from East Greenland, with n. spp. ; MADSEN (407) ; also SKEAT (568).

Germany :—Occurrence of *Diceras* in Hanover ; MENZEL, *Zeitschr. Deutsch. geol. Ges.* lvi, Protok. p. 10.—Fauna of the Solenhofen Plattenkalk ; WALTHER (640).

France :—Upper Jurassic Cephalopods and Gastropods from Calvados, with n. spp. ; BIGOT (53).—Few Jurassic fossils from Calvados ; DOUVILLÉ, *Bull. Soc. geol. France* iv, p. 106.—*Ammonites baylei* from Besançon ; PETITCLERC (480).—Fauna of the zone of *Lioceras concarum* at Mont d'Or, with n. spp. ; RICHE (527).

Spain :—Few fossils from various formations from Ortigosa ; VICENTE, *Bol. Soc. Aragon. Ci. nat.* ii, p. 127.

Switzerland :—Fauna of Ledonian Jura continued, with many n. spp., and n. genn. ; LORIOLE (401).—Jurassic *Belemnites* from Chablais ; ROESINGER, Eclog. geol. Helvet. viii, p. 211.—On a *Harpoceras* from the Lower Dogger ; STRÜBIN, Abh. Schweiz. pal. Ges. x.

Italy :—Upper Jura fossils from Bassano, with n. spp. ; CAMPANA (95).

Austro-Hungary :—Addenda to Pelecypod fauna of 'Stramberger Schichten,' with n. spp. ; REMEŠ (519).—Fossils from Olomutschan ; TRAUTH (618).

South Carpathians :—Callovian Fauna of Lupului (Rucar), with n. spp. ; SIMIONESCU (562).

Poland :—On some Polish fossils ; SIEMIRADZKI, Kosmos polski. xxviii, p. 503.—Oxfordian and Kimeridgian fossils, with n. spp. ; SIEMIRADZKI (560).—Jurassic fossils ; SIEMIRADZKI (559).

Russia :—*Nuculidæ* of Jura of European Russia, with n. spp. ; BORISSJAK (78).—Jura fossils from Daghestan ; RENZ (520).

Asia :—Cephalopod fauna of Spiti Shales, with many n. spp., and *Spiticeras*, n. subgen. ; UHLIG (622).—New Ammonites from Echizen and Nagato, Japan ; YOKOYAMA (668).—New species from Rikusen, Japan ; YOKOYAMA (667).

Australasia :—Fossils from Western Australia ; CHAPMAN (108).

Lias :—

British Isles :—Rhaetic fossils of South Wales direct line, with n. spp. of Pelecypoda ; REYNOLDS & VAUGHAN (522).—Few fossils from the Vale of Evesham ; RICHARDSON, P. Geol. Ass. xviii, p. 391.—Fossils from Cheltenham ; RICHARDSON (526).—Lists of fossils from near Bristol ; SHORT, Quart. J. Geol. Soc. lx, p. 170.—Fossils near Keynsham ; VAUGHAN & TUTCHER (625).—Fossils from S. Wales, STRAHAN & CANTRILL, Geology...S. Wales Coalfield, Part vi, Mem. geol. Surv. England.

Germany :—Few Upper Lias fossils from North-west Germany, with n. sp. of *Avicula* ; HOYER, Centrbl. Mineral. 1904, p. 385.

France :—Lower Lias Pelecypods from La Vendée, with n. spp. ; COSSMANN (142).

Spain :—List of fossils from Ricla (Zaragoza) ; NAVAS, Bol. Soc. espan. iii, p. 65.—Few fossils from various formations from Ortigosa ; VICENTE, Bol. Soc. Aragon. Ci. nat. ii, p. 127.

Portugal :—List of fossils from Lower Lias and Sinemurian ; CHOFFAT, Commis. geol. Portugal v, p. 49.

Italy :—Cephalopods from Monte Cetona, with many n. spp. ; FUCINI (236).—Pelecypods from Province of Palermo, with n. spp. ; MERCIAI (443).

Austro-Hungary :—Notes in Ammonites, with n. sp. of *Frechiella* from Hungary ; PRINZ (503).—Few fossils from Freistadtel ; RZEHAKE, Verh. geol. Reichsanst. 1904, p. 132.

Bosnia :—Cephalopods ; BECK (41).

Trias :—Notes on fossils in divisions of Rhaetic ; FUCHS, Verh. geol. Reichsanst. 1904, p. 293.—Notes on *Medlicottia* and *Episageceras*, n. gen. ; NOETLING (456).

British Isles :—Keuper fossils from Cheltenham ; RICHARDSON (526).—Fossils from S. Wales ; STRAHAN & CANTRILL, Geology...S. Wales Coalfield, Part vi, Mem. geol. Surv. England.

Germany :—Fossils from Black Forest region ; BROMBACH, Mt. Badisch. Geol. Landesanst. iv, p. 429.—Few Keuper fossils from near Apolda ; COMPUTER, Zeitschr. Naturw. lxxvii, p. 81.—Fossils from Vorarlberg ; FIEDLER, Zeitschr. Deutsch. geol. Ges. lvi, Mt. p. 8.—Fossils from South German Muschelkalk ; HENKEL, t. c. p. 218.—Notes on German fossils ; LANGENHAM (386).—Fauna of Central Germany, with n. genn. and n. spp. ; PICARD (485).

France :—Fossils from Bugarach ; GROSSOUVRE, Bull. Soc. Aude xiv, p. 50.

Italy :—New species of *Lima* and *Pinna* from Muschelkalk of Recoaro ; TOMMASI (614).—Lists of fossils from near Predazzo, with n. spp. ; PHILIPP (484).

Sicily :—Cephalopoda from western side of Island ; GEMMELLARO (246).

Sardinia :—Lists of fossils from ; TORNQUIST (616).

Austria :—Pelecypoda of the *Pachycardium*-strata of the Seiser Alp, with n. spp. ; BRÜHL (85).

Montenegro :—Few fossils ; CAMPANA, Atti Soc. Lincei xiii, Sem. 2, p. 554.—Cephalopoda, with n. spp. ; MARTELLI (422).

Asia :—Fossils from Eastern Asia ; SCHELLWIEN (548).—Fauna of the Bären Is., with n. spp. ; BÖHM (62).—Occurrence of *Holorites* in Baluchistan ; VREDENBURG (636).

4. PRIMARY.

Lists of fossils from Spiti ; HAYDEN, Mem. geol. Surv. India xxxvi, pt. 1.—Primary fossils from Sarajevo, with n. spp. ; KITTL (352).

Palæozoic :—

Asia :—Fossils from Eastern Asia ; SCHELLWIEN (548).—The fauna of Asia ; TSCHERNYSCHEW (620).—Ammonites of Japan ; YABE, J. geol. Soc. Tokyo xi, p. 26.

Australasia :—On some Victorian Pteropods, with n. spp. ; CHAPMAN (109).

Permian :—Note on *Cyclolobus haydeni*, Diener ; DIENER (190).

Russia :—Notes on *Schizodus planus* ; YAKOVLEV (666).

Asia :—Fauna of the Himalayas, with n. spp. ; DIENER (191).

Australasia :—Fossils from Western Australia ; CHAPMAN (108).

Carboniferous :—Notes on *Pericyclus fasciculatus*, McCoy ; CRICK (154).—*Pleuromutilus pulcher*, n. sp. ; CRICK (151).

British Isles :—Fossils from Lancashire Coal Measures ; BOLTON (75).—*Amphoreopsis paucicamerata*, n. gen. and sp., Isle of Man ; CRICK (152).—Review of British Pelecypods, continued, with n. spp., and *Nothamusium*, n. gen. ; HIND (306).—Lower Culm fossils of North Devon ; HIND, Geol. Mag. i, p. 392.—Few Lower Culm fossils from North Devon ; HIND, t. c. p. 584.—Few Upper Culm fossils from West Devon ; ROGERS & ARBER, t. c. p. 305.—Few fossils from Pendleside series in Derwent Valley ; STOBBS, P. Geol. Ass. xviii, p. 421.

Germany :—List of fossils from South Germany ; PARKINSON, Geol. Mag. i, p. 472.—A Culm fauna near Giessen ; PARKINSON (469).

Dahnatia :—Fossils from near Budua ; RENZ, Zeitschr. Deutsch. geol. Ges. lv, Mt. p. 16.

Moravia :—*Belemnites*, &c., from ; SMYČKA (582).

Russia :—Fossils from the Oural ; KONIOUSCHEVSKY, Mem. Com. geol. St. Petersb. xxii, p. 417.

America :—Fossils from Kansas ; BEEDE & ROGERS (47).—Fauna of Colorado ; Girty (256).—New genera from Texas and Kansas ; Girty (255).—Fossils from Arizona ; Girty in RANSOME, Pap. U. S. geol. Survey xxi, p. 46.

Devonian :—

Belgium :—Famennian of Condroz, lists of fossils ; DESTINEZ, Ann. Soc. geol. Belgique xxxi, Mem. p. 251.—Famennian fossils from Condroz ; DESTINEZ, t. c. Mem. p. 247.

Germany :—List of fossils from near Remscheid ; SPRIESTERSBACH,

Centrbl. Mineral. 1904, p. 599.—Fauna from near Dierdorf; DREVERMANN (198).

Austro-Hungary :—Fauna from Debnik near Krakau, with n. spp.; GURICH (276).

Moravia :—Fossils from; SPITZNER, Vestnik Klub. Prostějov v, p. 88.—Few fossils from Celechovic, with n. spp.; SMYČKA, op. cit. vii, p. 65.

Poland :—Middle Devonian forms; SOBOLEW (583).

Africa :—New species of Mollusca from Bokkeveld Beds, S. Africa; REED (516).

America :—New species and genera from Brazil; CLARKE (119).—List of fossils from Arizona; RANSOME, Pap. U. S. geol. Survey xxi, p. 37.

Silurian :—Notes on Cephalopoda; BLAKE (56).

British Isles :—Few Ludlow fossils from Cornwall; GREEN, Geol. Mag. i, p. 289.

Bohemia :—Many new genera and species; PERNER (477).

America :—New species from Brazil; CLARKE (118).—Ordovician fossils from Pennsylvania, with n. spp.; COLLIE (123).—Two Cephalopods from Lower Silurian of Venezuela; DREVERMANN, N. Jahrb. Min. 1904, i, p. 91.

Australasia :—Occurrence of *Cyclolituites* in New South Wales; ETHERIDGE (212).

Cambrian :—

Portugal :—Fauna of Haut-Alemtejo, with n. spp.; DELGADO (185).

America :—Canadian species of *Trocholites*; WHITEAVES (649).

Australasia :—*Modiolopsis knowsleyensis*, n. sp., Victoria; CHAPMAN, Rec. Geol. Surv. Victoria i, p. 222.

III. SYSTEMATIC.†

MOLLUSCA IN GENERAL.

Popular introduction to the Mollusca; BAKER (24).

Discussion on two questions of nomenclature; BURNE (94).

Cause of inverse symmetry; CONKLIN (134).

Evolution of Mollusca; GIARD (254).

Note on some points of nomenclature; JUKES-BROWNE (344).

Unknown Mollusc, Lake Baikal; KOROTNEFF (371).

Artificial parthenogenesis; LOEB (399).

Structure of the heart; MARCEAU (412, 417).

Colouring matter in the shell; SCHULZ (552).

I. CEPHALOPODA.

Locomotion, breathing, chromatophores; FRÖHLICH (235).

Luminous and integumentary organs of certain species; HOYLE (312).

Notes on Mediterranean species; JATTA (330).

Egg-integument; SCHWEIKART (551).

Spermatogenesis; THESING (611).

† This sign is prefixed to fossil forms.

DIBRANCHIATA.

Pharynx ; HEINRICH (296).

Key to Genera of Recent Species ; HOYLE (310).

Cirrobrachium filiferum, N. of Marquesas Is. ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 28, fig. : **n. sp.**

Froekenia, **n. gen.** for *F. clara*, **n. sp.**, Cape Mala, Panama ; HOYLE, t. c. p. 7, fig.

Loligo diomedee, Acapulco, Mexico ; HOYLE, t. c. p. 29, fig. : **n. sp.**

Mastigoteuthis dentata, Galapagos Is. ; HOYLE, t. c. p. 34, fig. : **n. sp.**

Octopus, young stages ; CHUN (114) : Structure of the heart ; MARCEAU (412).

Polypus oculifer, Galapagos Is. ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 14, fig. : *P. herdmani*, p. 187, *arborescens*, p. 189, Ceylon ; HOYLE (313), figg. : **n. spp.**

Rhynchoteuthis chuni, N. of Marquesas ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 32, fig. : **n. sp.**

Sepia, note on the egg ; DHÉRÉ (189).

Sepia burnupi, Natal ; HOYLE, J. Conch. xi, p. 27, fig. : **n. sp.**

Stauroteuthis hippocrepium, Malpelo I., Gulf of Panama ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 6, fig. : **n. sp.**

Tremoctopus scalenus, Panama ; HOYLE, t. c. p. 13, fig. : **n. sp.**

AMMONEA.

+*Arctoceras*, Böhm, renamed *Nathorstites*, q. v.

+*Braunsella*, **n. n.** for *Braunsina*, Buckman, preocc. ; BUCKMAN (90), p. cii.

+*Braunsina*, renamed *Braunsella*, q. v.

+*Canavarella*, **n. gen.**, type *C. belophora*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxxix.

+*Canavaria*, Buckm., renamed *Canavarina*, q. v.

+*Canavarina*, **n. n.** for *Canavaria*, Buckman ; BUCKMAN (90), p. cxli.

+*Darellella*, **n. gen.**, type *D. recticostata*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cvii.

+*Darellina*, **n. gen.**, type *D. planaris*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cvi.

+*Dawsonites*, **n. gen.** for *Trachyceras canadense*, Whiteaves, Trias ; BÖHM (62), p. 56.

+*Deltatoceras*, correction for *Deltoceras*, Buckman, 1902 ; BUCKMAN (90), p. cxix.

+*Entogonites*, **n. n.** for *Tetragonites*, Kittl non Kossmat ; KITTL, Verh. geol. Reichsanst. 1904, p. 322.

+*Epsigeceras*, **n. gen.** for *Sageceras wyneei*, Waagen, &c., Trias, India ; NOETLING, N. Jahrb. Min. B.B. xix, p. 363.

+*Frechiella*, **n. subgen.** of? for *Phylloceras subcarinatum*, Young & Bird ; PRINZ, op. cit. 1904, i, p. 31.

+*Himalayites* (Uhlig MS.) **n. gen.** for *H. treubi*, &c., **n. spp.**, Secondary, Sula Is. ; BOEHM (60), p. 38.

+*Hugia*, **n. gen.**, type *H. curva*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxi.

+*Lopadoceras*, **n. gen.**, type *L. arcuatum*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxi.

+*Nathorstites*, **n. n.** for *Arctoceras*, Böhm non Hyatt ; BÖHM (62), p. 61.

+*Nipponites*, **n. gen.** for *N. mirabilis*, **n. sp.**, Cretaceous, Japan ; YABE, J. Coll. Tokyo xx, No. 2, p. 20.

- +*Edania*, **n. gen.**, type *Æ. falcigera*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cvii.
- +*Osmanoceras*, **n. gen.** for *O. undulatum*, **n. sp.**, Carboniferous, Sarajevo ; KITTL, Jahrb. geol. Reichsanst. liii, p. 674.
- +*Paineia*, **n. gen.**, type *P. nitens*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. lxxvi.
- +*Spiticerus*, **n. subgen.** of *Holcostephanus* for *H. spitiensis*, Blanford, &c., Spiti Shales ; UHLIG (622), p. 85.
- +*Stokeia*, **n. gen.**, type *S. marmorea*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxxvii.
- +*Taramellia*, Campana, renamed *Taramelliceras*, q. v.
- +*Taramelliceras*, **n. n.** for *Taramellia*, Campana, preocc. ; CAMPANA, Boll. Soc. geol. Ital. xxiii, p. 251.
- +*Tetragonites*, **n. gen.** for *T. grimmeri*, **n. sp.**, Carboniferous, Sarajevo ; KITTL, Jahrb. geol. Reichsanst. liii, p. 677 : Renamed *Entogonites*, q. v.
- +*Uhligia*, **n. gen.**, type *Hamites minutus*, Neum. & Uhlig ; KOENEN (366), p. 57.

TETRABRANCHIATA.

- +*Amphoreopsis*, **n. gen.** for *A. paucicamerata*, **n. sp.**, Carboniferous, Isle of Man ; CRICK, P. Malac. Soc. London vi, p. 134.
- Nautilus*, popular notes on ; MANGER, P. South London Soc. 1903, p. 1.

II. GASTROPODA.

Account continued by SIMROTH in BRONN (86).
 Formation of germinal layers ; FUJITA (237).
 Excretory activities in the nuclei of embryos ; GLASER (258).
 Systematic review of relationship ; SIMROTH (566).
 Works on the distribution ; SIMROTH (563).

PULMONATA.

Physiology of the nervous system ; JORDAN (342).

STYLOMMATOPHORA.

TESTACELLIDÆ and SELENITIDÆ.

- Monograph of Agnatha continued ; KOBELT in MARTINI & CHEMNITZ (426).
- Afrorhytida* (Moellendorff MS.), **n. subgen.** of *Rhytida*, type *R. knysnensis* (Pfr.) ; KOBELT in MARTINI & CHEMNITZ (426), p. 61.
- Edentulina stumpffii*, Nossi-Bé ; KOBELT in MARTINI & CHEMNITZ (426), p. 294, fig. : **n. sp.**
- Ennea*, notes on classification ; KOBELT (358) : *E. albida*, Putzeys, is a synonym of *Streptostele horei*, Smith ; ANCEY, J. Conchyl. lii, p. 290 : *E. iwakawa*, **n. subsp.** ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 631 : *E. (Diaphora) porrecta*, Martens, p. 116, *homalogyra*, Quadras & Moellendorff, p. 119, (*Sinoënea*) *fuchsi*, Gredler, p. 145, *micropleuris*, p. 148, *plagiostoma*, p. 150, *densecostulata*, Moellendorff, *densecostata*, Boettger, p. 151, *malaccana*, Moellendorff, p. 287, (*Gulella*) *noltei*, Boettger, figd. ; KOBELT in MARTINI & CHEMNITZ

- (426) : *E. (Gulella) girardi*, **n. n.** for *E. hidalgovi*, Girard non Moellendorff ; KOBELT in MARTINI & CHEMNITZ (426), p. 287.
- Ennea (Sinoennea) boettgeri* (Nevill MS.), Japan ; KOBELT in MARTINI & CHEMNITZ (426), p. 288, fig. : **n. sp.**
- Glandina bogotensis*, Colombia ; DA COSTA, P. Malac. Soc. London vi, p. 6, fig. : *G. lamyi*, Mexico ; FISCHER & CHATELET, J. Conchyl. li, p. 321, fig. : **n. spp.**
- Indoennea*, **n. subgen.** of *Ennea* for *E. vara*, Bens., &c. ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 28 : also in MARTINI & CHEMNITZ (426), p. 154.
- Pseudelma*, **n. gen.** for *Ennea incisa*, Morel., and *E. martensiana*, Morel. ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 29 : also in MARTINI & CHEMNITZ (426), p. 125.
- Ptychorhytida* (Moellendorff MS.), **n. subgen.** of *Rhytida*, type *R. beraudi* (Gassies) ; KOBELT in MARTINI & CHEMNITZ (426), p. 65.
- Pupa canaliculata*, Crosse, is a synonym of *Gibbus uvula*, Desh. ; ANCEY, J. Conchyl. lii, p. 305.
- Rhytida beraudi*, Gass., is a synonym of *R. bisulcata*, Pfr. ; ANCEY, t. c. p. 289 : *R. (Macrocycloides) euglypta*, **n. n.** for *R. lutea*, Moellendorff ; KOBELT in MARTINI & CHEMNITZ (426), p. 45.
- Rhytida duplicata*, New Zealand ; SUTER, P. Malac. Soc. London vi, p. 155, fig. : **n. sp.**
- Sinoennea*, **n. subgen.** of *Ennea*, type *Ennea strophiodes*, Gredler ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 27 : also in MARTINI & CHEMNITZ (426), p. 142.
- Streptaxis rollandi*, Bern., note on ; ANCEY, J. Conchyl. lii, p. 307.
- S. paradiscus*, Mlldff., is a synonym of *S. discus*, Pfr. ; ANCEY, t. c. p. 289.
- Streptostyla costaricensis*, Costa Rica ; DA COSTA, P. Malac. Soc. London vi, p. 6, fig. : **n. sp.**
- Testacella haliotidea*, habits ; COOKE (138).

LIMACIDÆ, PHILOMYCIDÆ, and ZONITIDÆ.

- Agriolimax afer*, p. 676, *uataderensis*, p. 678, *gardullanus*, p. 679, *gofanus*, p. 680, *glandulosus*, p. 681, *koschanus*, p. 685, *kontanus*, *concrementosus*, p. 687, *kaffanus*, *abessinicus*, p. 689, *deckenii*, p. 690, *gimirranus*, p. 691, *fuscus*, p. 693, *limacoides*, p. 694, Abyssinia ; SIMROTH, Zool. Jahrb. Syst. xix, figg. : **n. spp.**
- Amalia guebbardi*, Alpes-Maritimes ; POLLONERA in CAZIOT, Feuille Natural. 1904, xxxiv, p. 223, fig. : **n. sp.**
- Ariophanta juliana*, generative organs ; OVERTON (463).
- Atoxon erlangeri*, Abyssinia ; SIMROTH, Zool. Jahrb. Syst. xix, p. 700, fig. : **n. sp.**
- Collingea*, notes on ; COLLINGE (126).
- Coneuplecta moellendorffi*, **n. n.** for *C. globulosa*, Mlldff., 1901 non 1900 ; GUDE, J. Malac. xi, p. 95.
- Ctenoglypta*, **n. gen.** for *Helix newtoni*, Nevill ; ANCEY, J. Conchyl. lii, p. 306.
- Damayantia*, notes on ; COLLINGE (126) : *D. smithi*, notes on ; GODWIN-AUSTEN (261).
- Euplecta pratti*, British New Guinea ; GUDE, P. Malac. Soc. London vi, p. 114, fig. : **n. sp.**
- Hirasea insignis*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 636 : **n. sp.**
- Hyalinia adjaciensis*, Corsica ; CAZIOT, Mem. Soc. zool. France xvi, p. 34, fig. : **n. sp.**
- Isselentia*, notes on ; COLLINGE (126).

- Kaliella gudei*, n. subsp., *pallida*, Pils., note on; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 634.
- Kaliella sororecula*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 107 : *K. thaunumi*, p. 119, *lubricella*, p. 120, Hawaii; ANCEY, P. Malac. Soc. London vi, figg. : *K. kikaigashimae*, *humiliconus*, *okinoshimana*, *bimaris*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 633 : **n. spp.**
- Limax variegatus*, biology; KÜNKEL (375).
- Limax sidamoensis*, Sidamo; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 143 : *L. subfossilis*, *duplex*, Alpes-Maritimes; POLLONERA in CAZIOT, Feuille Natural. 1904, xxxiv, p. 223, figg. : **n. spp.**
- Macrochlamys dulcis*, p. 635, *gudei*, p. 636, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1904 : *M. cerasina*, n. subsp.; PILSBRY & HIRASE, Nautilus xviii, p. 6.
- Macrochlamys izushichitajimana*, *decens*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 106 : *M. chaunax*, Japan; PILSBRY & HIRASE, op. cit. xviii, p. 6 : *M. subelimatus*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 635 : **n. spp.**
- Microcystina vaga*, *lampira*, Japan; PILSBRY & HIRASE, t. c. p. 634 : **n. spp.**
- Microcystis rufobrunnea*, Hawaii; ANCEY, P. Malac. Soc. London vi, p. 119, fig. : **n. sp.**
- Narviniidae*, monograph continued, with figg. of *N. (Xesta) kaledupana*, p. 1097, *perfragilis*, Moellendorff, p. 1098; KOBELT in MARTINI & CHEMNITZ (426).
- Omphalina pilsbryi*, Alabama; CLAPP, Nautilus xviii, p. 30 : **n. sp.**
- Parmacella deshayesi*, eggs, &c.; COLLINGE (129).
- Plotropis*, **n. subgen.** of *Otesia*, type *O. biangulata*, Pfr.; KOBELT in MARTINI & CHEMNITZ (426), p. 1093.
- Sitala latissima*, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 632.
- Sitala insignis*, Japan; PILSBRY & HIRASE, t. c. p. 632 : **n. sp.**
- Spirotoxon elegans*, Simr., figd.; SIMROTH, Zool. Jahrb. Syst. xix, p. 702.
- Spirotoxon stuhlmanni*, *neumanni*, E. Africa; SIMROTH, t. c. p. 704, figg. : **n. spp.**
- Trochomorpha (Nigritella) contigua*, Pse., n. var.; BOETTGER, Zool. Jahrb. Syst. xx, p. 409.
- Trochomorpha (Nigritella) insolata*, Marshall Is.; BOETTGER, t. c. p. 410 : *T. cultrata*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 632 : *T. gulielmi*, *dautzenbergi*, Engano; SYKES, J. Malac. xi, p. 87, figg. : **n. spp.**
- Trochonanina bonhouri*, Lake Albany, *zeltneri*, Oualamo; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 143 : **n. spp.**
- Varania*, **n. g.**, type *V. loennbergi*, **n. sp.**, Cameroons; SIMROTH, Zool. Jahrb. Syst. xix, p. 710, fig.
- Vaucheria*, **n. gen.** for *V. tingitana*, **n. sp.**, N. W. Africa; PALLARY, J. Conchyl. lii, p. 7, fig.
- Vitrea radiatula*, n. var.; PILSBRY & HIRASE, Nautilus xvii, p. 117.
- Vitrea hawaiiensis*, Hawaii; ANCEY, P. Malac. Soc. London vi, p. 120, fig. : **n. sp.**
- Vitrina comorensis*, Pfr., is a young *Helix aperta*; ANCEY, J. Conchyl. lii, p. 288 : *V. keppelli*, Pfr., *ultima*, Mouss., and *kermadecensis*, Smith, are all the same; ANCEY, t. c. p. 307.
- Vitrina bozasi*, Riv. Oubangui; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 143 : **n. sp.**
- Xesta sparsa*, Mousson, notes on; ANCEY, J. Conchyl. lii, p. 298.
- Zonitoides apertus*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 636 : *Z. chishimanus*, Japan; PILSBRY & HIRASE, Nautilus xviii, p. 5 : **n. spp.**

ARIONIDÆ.

- Arion hortensis*, absence of male generative organs ; COLLINGE, J. Malac. xi, p. 15 : *A. subfuscus*, note on var. ; COLLINGE (130).
Ariunculus pallargi, Algeria ; COLLINGE, J. Malac. xi, p. 47 : **n. sp.**
Ostracolethe, anatomy ; SIMROTH, Zeitschr. wiss. Zool. lxxvi, pp. 612-672, figg.

ENDODONTIDÆ.

- Carthæa*, Hutton, renamed *Serpho*, q. v.
Delos, **n. n.** for *Rhenea*, Hutton non Saalmuller ; HUTTON, P. Linn. Soc. N. S. Wales xxix, p. 461.
Endodontu (*Charopa*) *transenna*, New Zealand ; SUTER, P. Malac. Soc. London vi, p. 156, fig. : *E. (Charopa) ochra*, (*C. chrysaugeia*, p. 107, *alloia*, p. 108, New Zealand ; WEBSTER, t. c. figg. : **n. spp.**
Helix mathinnæ, Petterd, *hookeriana*, Johnston, figd. ; HEDLEY (292).
Luoma moellendorffi, Suter, sinistral specimen ; SUTER, P. Malac. Soc. London vi, p. 157.
Luoma (Phrixgnathus) francesci, (*P. elaiodes*, New Zealand ; WEBSTER, t. c. p. 106, figg. : **n. spp.**
Punctum horneri, Oahu ; ANCEY, J. Malac. xi, p. 66, fig. : *P. infans*, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 107 : *P. elachistum*, *apertum*, Japan ; PILSBRY & HIRASE, op. cit. xviii, p. 5 : *P. atomus*, p. 636, *rota*, p. 637, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
Pyramidula alternata, spire variation ; BAKER (31).
Pyrrha, Hutton, renamed *Thermia*, q. v.
Rhenea, Hutton, renamed *Delos*, q. v.
Serpho, **n. n.** for *Carthæa*, Hutton non Walker ; HUTTON, P. Linn. Soc. N. S. Wales xxix, p. 461.
Thermia, **n. n.** for *Pyrrha*, Hutton non Cabanis ; HUTTON, t. c. p. 461.

HELICIDÆ.

- Alabastrina*, **n. subgen.** of *Iberus*, for *I. alabastrites*, Mich., etc. ; KOBELT in ROSSMAESSLER (543), pp. 132, 194.
Albersia subsphærica, Gebi I. ; FULTON, J. Malac. xi, p. 54, fig. : *A. waigiouensis*, Waigiou ; SYKES, t. c. p. 88, fig. : **n. spp.**
Ashmunella walkeri, New Mexico ; FERRISS, Nautilus xviii, p. 53 : *A. townsendi*, New Mexico ; BARTSCH, Smithson. Collect. xlvii, p. 13 : **n. spp.**
Botteria, **n. gen.** for *Campylæa setosa*, Zgl. ; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
Cathaica orithya, *pulveratrix*, *nodulifera*, **n. var.** ; ANDREAE (16).
Cathaica (Eucathaica) sturanyi, Rolle, (*Campylocathaica*) *hermanni*, Mlldff., Western Turkestan ; GUDE, J. Malac. xi, p. 93 : *C. (Eucathaica) subtilistriata*, p. 59, (*Xerocathaica*) *ohlmeri*, (*X.*) *holdereri*, p. 64, (*Pseudiberus*) *futtereri*, p. 66, Central Asia ; ANDREAE (16), figg. : **n. spp.**
Cattania, **n. gen.** for *Campylæa trizona*, Zgl. ; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
Chloritis tosanus, **n. subsp.** ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 629.
Chloritis obscurus, Japan ; PILSBRY & HIRASE, t. c. p. 628, fig. : **n. sp.**
Corilla erronella (Nevill MS.), Ceylon ; GUDE, J. Malac. xi, p. 45, fig. : **n. sp.**
Discolepis, **n. gen.** for *Helix desidens*, Rang. (of which *H. ancylochila*,

- Crosse, is a synonym), and *sumichrasti*; ANCEY, J. Conchyl. lii, p. 298.
- Drobacia*, **n. gen.** for *Campylæa banatica*, Partsch; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Dupotetia*, **n. subgen.** of *Iberus*, for *I. dupotetianus*, Terver, etc.; KOBELT in ROSSMAESSLER (543), pp. 132, 195.
- Epiphragmophora remondi*, Tryon, *verrilli*, Ancey, notes on; ANCEY, J. Conchyl. lii, p. 312.
- Eulota pannosa*, *shikokuensis*, p. 3, *mimula*, p. 4, *friedeliana*, p. 33, *kobensis*, p. 34, **n. varr.**; PILSBRY & HIRASE (496): *E. kobensis*, *commoda*, *shikokuensis*, **n. varr.**; PILSBRY & HIRASE, Nautilus xvii, p. 105: *E. friedeliana*, p. 625, *callizona*, p. 626, *despecta*, p. 627, **n. varr.**; PILSBRY & HIRASE, P. Ac. Philad. 1904.
- Eulota endo*, p. 105, *chishimana*, p. 116, Japan; PILSBRY & HIRASE, Nautilus xvii: *E. (Ægista) eminens*, p. 4, (*Euhadra*) *irrediviva*, p. 32, (*Ægista*) *tokunoshimana*, (*Plectotropis*) *pressa*, p. 33, Japan; PILSBRY & HIRASE, op. cit. xviii: *E. globosa*, Shantung; JONES & PRESTON, P. Malac. Soc. London vi, p. 140, fig.: *E. (Ægista) omma*, p. 625, (*Euhadra*) *okinoerabuensis*, p. 626, *niyaka*, p. 627, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904: **n. spp.**
- Eurystoma vittata*, Albers, anatomy; GODWIN-AUSTEN (260).
- Faustina*, **n. subgen.** of *Campylæa*, for *C. faustina*, Ziegl.; KOBELT in ROSSMAESSLER (543), p. 186.
- Fruticicola erjavecii*, Brus., **n. var.**; LAJOS (378).
- Fruticicola dacica*, Hungary; LAJOS, Ann. Mus. Hungar. ii, p. 294: **n. sp.**
- Ganesella myomphala*, *selasia*, **n. subsp.**; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 630.
- Ganesella tokunoshimana*, Japan; PILSBRY & HIRASE, t. c. p. 629: **n. sp.**
- Helix*, monograph continued; KOBELT in MARTINI & CHEMNITZ (426): Review of Hungarian species; SOOS (586): A number of forms figured from N.W. Africa, with newly named varieties; PALLARY (466): *H. pomatia*, structure of the spermatozooids; LEE (391): *H. pomatia*, evolution of the spermatozooids; LEE (392): *H. nemoralis*, variation; WINKWORTH (655): *H. nemoralis*, sinistral; COLLIER (124): *H. pomatia*, monstrosity; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 125: *H. pomatia*, sinistral; JENNINGS (331): *H. aspersa*, reversed; WELCH & STELFOX, Irish Natural. xiii, p. 189, fig.: *H. auridens*, Rang, **n. var.**; ANCEY, J. Conchyl. lii, p. 311: *H. pomatia*, monstrosities; BELLEVOYE (49): *H. pomatia*, olfactory sense; DUBOIS (201): YUNG (669): *H. primeana*, *hidalgoiana*, *cailleti*, *mabiliei*, *leucolena*, all of Crosse, *duroi*, Hidalgo, *calculus*, Pfr., are all synonyms of various spp.; ANCEY (14): *H. hortensis* and *nemoralis*, study of variation; LANG (384): *H. pomatia*, function of salivary glands; GORKA (264): *H. aperta*, distribution and variability; CAZIOT (105): *H. niciensis*, varr.; CAZIOT (103): *H. (Helicogena) blumi*, *critica*, *pseudopomatia*, Kobelt, *escherichi*, Bttgr., *pathetica*, Albers, *philibensis*, Pfr., figd.; KOBELT in MARTINI & CHEMNITZ (426): *H. albescens* (Jan) Rossm., note on; KOBELT (365): *H. vermiculata*, synonymy and distribution; CAZIOT (107): *H. ciliciana*, *pachya*, *adanensis*, *moabitica*, *vulgaris*, *lutescens*, *figulina*, *pelasgica*, *pathetica*, *cavata*, **n. varr.**; KOBELT in MARTINI & CHEMNITZ (426).
- Helix paoliana*, p. 35, *mauryi*, p. 36, Corsica; CAZIOT, Mem. Soc. zool. France xvi, figg.: *H. arnouldi*, p. 100, *joubini*, p. 101, France; GERMAIN, Bull. Soc. Ouest France xiv, figg.: *H. (Helicogena) rueppelli*, Egypt, p. 122, *oestreichi*, Albania, *frivaldszkyi*, Turkey, p. 146, *ciliciana*, Cilicia, p. 152, *dickhauti*, Jerusalem, p. 185, *straubei*, Turkey, p. 190, *anthesi*, Bosphorus, p. 191, *pelasgica*, Greece, p. 192; KOBELT in

- MARTINI & CHEMNITZ (426), figg.: *H. (Xerophila) redassiana*, p. 12, (*X.*) *misslei*, p. 14, (*X.*) *castriesi*, p. 15, (*X.*) *foucauldi*, p. 16, N.W. Africa; PALLARY, J. Conchyl. lii, figg.: **n. spp.**
- Iberus*, notes on; KOBELT (363): *I. mariannæ*, n. var., pp. 198, 284; KOBELT in ROSSMAESSLER (543).
- Kosicia*, **n. gen.** for *Campylæa intermedia*, Fer.; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Murella galdensis*, p. 21, *saprensis*, p. 22, *coccovelli*, p. 23, *marateensis*, p. 24, *mingardi*, p. 57, *consigliana*, p. 58, *lucana* (Westlnd.), p. 59, *sirinensis*, p. 60, Italy; KOBELT, t. c.: **n. spp.**
- Obba subgranulata*, Batjan; SYKES, J. Malac. xi, p. 89, fig.: **n. sp.**
- Oreohelix*, **n. gen.** for the Rocky Mountain Helices of the *H. strigosa* group; PILSBRY, Nautilus xvii, p. 131.
- Oreohelix clappi*, Arizona; FERRISS, Nautilus xviii, p. 53: **n. sp.**
- Otala*, notes on; KOBELT (363).
- Papuina unicolor*, Pfr., comes from Waigiou; ANCEY, J. Conchyl. lii, p. 291: *P. unicolor*, Pfr., comes from Gebi I.; FULTON, J. Malac. xi, p. 53: *P. barnaclei*, Smith, is a synonym of *P. alfredi* var. *trichroa*, Mart.; ANCEY, J. Conchyl. lii, p. 291: *P. linteræ*, Mliff., is a synonym of *P. secans*, Hedley; ANCEY, t. c. p. 311: *P. lanceolata*, n. var.; SYKES, J. Malac. xi, p. 91.
- Papuina fallax*, Gebi I.; FULTON, J. Malac. xi, p. 53, fig.: *P. ecolorata*, Batjan, *semibrunnea*, Gebi I.; SYKES, J. Malac. xi, p. 90, figg.: **n. spp.**
- Planispira endoptycha*, Martens, n. var.; SYKES, J. Malac. xi, p. 88.
- Planispira (Cristigibba) gebiensis*, Gebi I., p. 88, (*C.*) *fruhstorferi*, Obi, p. 89; SYKES, J. Malac. xi, figg.: **n. spp.**
- Plectopylis (Sinicola) hirasei*, Riukiu Is.; PILSBRY, Nautilus xviii, p. 58: **n. sp.**
- Pleurodonte gudeana*, **n. n.** for *Helix neogranadensis*, Kobelt non Pfr.; ANCEY, J. Conchyl. lii, p. 297.
- Polygyra tridentata*, n. subsp.; PILSBRY, Nautilus xvii, p. 142: *P. stenotrema*, n. var.; CLAPP, op. cit. xviii, p. 86: *P. appressa*, p. 89, *wheatleyi*, p. 90, n. varr.; PILSBRY, t. c.: *P. monodon* and *hirsuta*, albino; HYNING, t. c. p. 92.
- Polygyra (Stenotrema) barbata*, Alabama; CLAPP, Nautilus xviii, p. 85: **n. sp.**
- Sabljaria*, **n. gen.** for *Campylæa stenomphala*, Menke; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Sonorella*, review of group, *S. walcottiana* should be *walcottiana*; BARTSCH (35): *S. lohrii*, n. subsp.; PILSBRY, Nautilus xviii, p. 59.
- Sonorella ashmuni*, p. 190, Arizona, *nelsoni*, p. 191, *goldmani*, Mexico, *merrilli*, p. 192, Lower California, *dalli*, Arizona, p. 193, *earnsi*, Mexico, p. 194, *baileyi*, p. 195, Mexico, *fisheri*, p. 197, California; BARTSCH, Smithsonian. Collect. xlvii, figg.: **n. spp.**
- Systrophia moellendorffi*, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, p. 35, fig.: **n. sp.**
- Thersites*, critical list of the *Sphaerospira* section with forms figd. and n. var. of *T. lessoni*; FULTON (240): *T. beddomæ* is a variety of *bellendenkerensis*; FULTON, J. Malac. xi, p. 1.
- Thersites concors*, Queensland; FULTON, t. c. p. 8, fig.: **n. sp.**
- Trishoplita mesogonia*, n. var.; PILSBRY & HIRASE, Nautilus xvii, p. 106.
- Trishoplita nitens*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 628: **n. sp.**
- Vidovicia*, **n. gen.** for *Campylæa lacticina*, Zgl.; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Vulnus*, **n. sect.** for *Planispira endoptycha*, Martens; SYKES, J. Malac. xi, p. 88.

- Westerlundia*, **n. subgen.** of *Fruticicola* for *F. schuberti*, Roth, etc.; KOBELT in ROSSMAESSLER (543), pp. 131, 181.
Xanthomelon bednalli, Central Australia; PONSONBY, P. Malac. Soc. London vi, p. 182 fig. : **n. sp.**
Xerophila ammonis, **n. var.**; KOBELT in ROSSMAESSLER (543), p. 201.
Xerophila adelpha, p. 292, *homoleuca* (Sabljär and Kučik), p. 293, Hungary; LAJOS, Ann. Mus. Hungar. ii : **n. spp.**

BULIMIDÆ and BULIMULIDÆ.

- Amphidromus palaceus*, subcarinate var.; BULLEN, P. Malac. Soc. London vi, p. 109.
Amphidromus weyersi, Borneo; DAUTZENBERG, Ann. Soc. malac. Belgique xxxviii, p. 4, fig. : *A. gossei*, Borneo; BARTSCH, Smithson. Collect. xlvii, p. 292, fig. : **n. spp.**
Bulimulus pallidior, Sby., notes on, *B. pluto*, Crosse, and *nuciformis*, Petit, are respectively synonyms of *B. tupacii*, D'Orb., and *nux*, Brod.; ANCEY, J. Conchyl. lii, pp. 301 & 302.
Bulimulus (Drymæus) abruptus, p. 35, *loxostylus*, *pergracilis*, p. 37, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, figg. : *B. ephippium*, *goniotropis*, Brazil; ANCEY, Nautilus xvii : **n. spp.**
Bulimus (?) illustris, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, fig. : **n. sp.**
Drymæus nubilus, Preston, is a synonym of *D. reclusianus* var. *martensianus*; ANCEY, Nautilus xviii, p. 22.
Drymæus multispira, Bolivia; DA COSTA, P. Malac. Soc. London vi, p. 5, fig. : **n. sp.**
Odontostomus inflatus, Wagner, **n. varr.**; ANCEY, J. Conchyl. lii, p. 303.
Odontostomus squarrosus, Brazil, *glabratus*, *deraini*, Argentina; ANCEY, Nautilus xvii, p. 103 : **n. spp.**
Porphyrobaphe sarcostoma, Ancey, is a synonym of *P. yatesi*; ANCEY, t. c. p. 104.
Strophocheilus mabiliei, Crosse, is a synonym of *Bulimus pulicarius*, Reeve, and *S. dalmasi*, Dtz., comes from Colombia; ANCEY, J. Conchyl. lii, pp. 300 & 301 : *S. argenteus*, Jouss., note on; ANCEY, t. c. p. 314.
Strophocheilus (Eurytus) auriformis, Colombia, *miersi*, Brazil; DA COSTA, P. Malac. Soc. London vi, p. 5, figg. : **n. spp.**
Thaumastus sangœ, *biteniatus*, epiphragms; SMITH (572).

BULIMINIDÆ, UROCOPTIDÆ, and PUPIDÆ.

- Anoma*, notes on with figg. of several forms and **n. var.** of *A. fuscolabris*; SYKES (606).
Brachypodella obesula, **n. n.** for *Cylindrella obesa*, Weinl. non Ad.; PILSBRY in TRYON (619), xvi, p. 195.
Buliminus bieti, Ancey, is a good species; ANCEY, J. Conchyl. lii, p. 299.
Buliminus silvestris, (*Napeus*) *karagoinensis*, Central Asia; ROSEN, Nachrbl. Deutsch. malak. Ges. 1904, p. 169 : **n. spp.**
Clausilia dubia, *procera*, **n. varr.**; CSIKI (158) : *C. bocki*, Sykes, note on; ANCEY, J. Conchyl. lii, p. 307 : *C. itala*, study of variation; WELDON (647) : *C. pilsbryana*, **n. n.** for *C. oscariana*, Pilsbry non Gredler; ANCEY, Nautilus xviii, p. 21 : *C. ducalis*, p. 809, *platydera*, p. 813, *aurantiaca*, p. 815, *hyperoptyx*, p. 830, *dæmonorum*, p. 833, *tryoni*, p. 837, **n. varr.**; PILSBRY, P. Ac. Philad. 1904.
Clausilia (Albinaria) holtzi, Crete; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 110 : *C. millennaris*, Hungary; CSIKI, Ann. Mus. Hungar. i,

- p. 108: *C. cymatodes*, *nagashimana*, p. 180, *ventriluna*, p. 811, *ikiensis*, p. 812, *mikawa*, p. 813, *hosayaka*, *koshikijimana*, p. 814, *okinoerabuensis*, *azumai*, p. 816, *nakadai*, p. 818, *tokunoshimana*, p. 819, *ophidoon*, p. 820, *subhickonis*, p. 821, *purissima*, *asperata*, p. 826, *hyperptyx*, p. 827, *kikaiensis*, p. 828, *sarissa*, p. 829, *yaeyamensis*, p. 831, *pattalus*, p. 832, *thaumatopoma*, p. 834, *hedleyi*, p. 835, *cladoptyx*, p. 836, Japanese Empire; PILSBRY, P. Ac. Philad. 1904, figg.: **n. spp.**
- Coryna biarmata* (Bttgr. MS.), Hertzgovina; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 105, fig.: **n. sp.**
- Diceratoptyx*, **n. sect.** of *Clausilia*, type *C. cladoptyx*, **n. sp.**; PILSBRY, P. Ac. Philad. 1904, p. 836.
- Ena* (*Cerastus*) *lagariensis*, British East Africa; SMITH, P. Malac. Soc. London iv, p. 68, fig.: **n. sp.**
- Hemizaphys*, **n. sect.** of *Clausilia*, type *C. pinto*, Pils.; PILSBRY, P. Ac. Philad. 1904, p. 824.
- Jaminia muscorum*, sinistral; BALDWIN (32).
- Lyropupa lyrata*, Gould, note on, *mirabilis*, Ancey, *perlonga*, Pease, figd.; ANCEY, P. Malac. Soc. London vi, pp. 125 & 126: *L. mirabilis*, *magdalenæ*, **n. varr.**; ANCEY, J. Malac. xi, p. 68.
- Lyropupa clathratula*, Hawaii, *carbonaria*, p. 125, *microthauma*, Oahu, p. 126; ANCEY, P. Malac. Soc. London vi, figg.: **n. spp.**
- Metazaphys*, **n. sect.** of *Clausilia*, for *C. hachijoensis*, Pils., &c.; PILSBRY, P. Ac. Philad. 1904, p. 811.
- Nenia huancabambensis*, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, p. 38, fig.: **n. sp.**
- Nesiophædusa*, **n. sect.** of *Clausilia*, type *C. bernardii*, Pfr.; PILSBRY, P. Ac. Philad. 1904, p. 815.
- Nesopupa tamagonari*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 118: *N. baldwini*, Maui and Hawaii, *plicifera*, Oahu, p. 122, *thaanumi*, Hawaii, *wesleyana*, Hawaiian Is., p. 123, *kauaiensis*, Kauai, p. 124; ANCEY, P. Malac. Soc. London vi, figg.: **n. spp.**
- Oligozaphys*, **n. sect.** of *Clausilia*, type *C. hedleyi*, **n. sp.**; PILSBRY, P. Ac. Philad. 1904, p. 835.
- Oophædusa*, **n. sect.** of *Clausilia* for *C. ophidoon*, **n. sp.**; PILSBRY, t. c. p. 820.
- Parazaphys*, **n. sect.** of *Clausilia*, type *C. thaumatopoma*, **n. sp.**; PILSBRY, t. c. p. 834.
- Perrieria canefriana*, Obi; SYKES, J. Malac. xi, p. 91, fig.: **n. sp.**
- Pholeoteras*, **n. gen.** for *P. euthrix*, **n. sp.**, Hertzgovina; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 106, fig.: **n. sp.**
- Pupidæ*, notes on nomenclature; DALL (168): *P. cupa*, Jan, **n. var.**; ANDREAE (16).
- Pupa insulivaga*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 631: **n. sp.**
- Serrulina collasi*, Corfu; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 103, fig.: **n. sp.**
- Vertigo hirasei*, **n. subspp.**; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 631: *V. andrusiana*, Pils., note on; PILSBRY, Nautilus xvii, p. 131.
- Vertigo japonica*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 118: **n. sp.**

STENOGYRIDÆ and ACHATINELLIDÆ.

- Achatinidæ*, review of commenced, with **n. varr.** of *A. achatina*, L., p. 10, *panthera*, Fer., p. 45, *fulica*, Fer., p. 58; PILSBRY in TRYON (619), xvii.

- Achatina occidentalis*, Corisco I. ; PILSBRY in TRYON (619), xvii, p. 23, fig. : **n. sp.**
- Achatinella multizonata*, notes on variation ; COOKE (139).
- Amastrea luctuosa*, Pfr., n. var., with fig. of *A. henshawi*, ANCEY ; ANCEY, P. Malac. Soc. London vi, p. 121.
- Amastrea rex*, Hawaiian Is. ; SYKES, Ann. Nat. Hist. xiv, p. 159, fig. : **n. sp.**
- Archachatina marginata*, Swains., n. var. ; PILSBRY in TRYON (619), xvii, p. 111.
- Auriculella pulchra*, Pease, is a var. of *A. auricula* ; ANCEY, J. Conchyl. lii, p. 304.
- Auriculella malleata*, Oahu, p. 120, *canalifera*, Molokai, p. 121 ; ANCEY, P. Malac. Soc. London vi, figg. : **n. spp.**
- Burtoa nilotica*, Pfr., n. var. ; PILSBRY in TRYON (619), xvi, p. 303.
- Carelia turricula*, Mighels, *fuliginea*, Pfr., n. varr. ; ANCEY, P. Malac. Soc. London vi, pp. 121, 122.
- Leptocallista*, n. sect. of *Leptocala* for *Achatina raffrayi*, Jouss., and *grandidieriana*, Brgt. ; PILSBRY in TRYON (619), xvii, p. 75.
- Limicolaria lucalana*, **n. n.** for *Bulimus jaspideus*, Morelet, 1866 non 1863, p. 262, *felina*, Shuttl., n. var., p. 266, *saturata*, Smith, n. var., p. 286 ; PILSBRY in TRYON (619), xvi : *L. hidalgovi*, Crosse, note on ; ANCEY, J. Conchyl. lii, p. 305.
- Limicolaria agathina* (Gabb), *tryoniana*, West Africa, p. 250, *longa*, British East Africa, p. 284 ; PILSBRY in TRYON (619), xvi, figg. : **n. spp.**
- Limicotaria* (sic) *joubini*, Congo ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : **n. sp.**
- Metachatina*, **n. gen.**, type *Bulimus kraussi*, Pfr. ; PILSBRY in TRYON (619), xvi, p. 307.
- Opeas*, notes on with n. var. of *O. prestoni* ; SYKES, P. Malac. Soc. London vi, p. 112.
- Opeas heptagyrum*, Marshall Is. ; BOETTGER, Zool. Jahrb. Syst. xx, p. 411 : *O. henshawi*, Hawaii ; SYKES, P. Malac. Soc. London vi, p. 112 : *O. brevispira*, *kyotoensis*, p. 637, *obesipira*, p. 638, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
- Partulina physa*, n. var. ; ANCEY, P. Malac. Soc. London vi, p. 121.
- Pseudachatina pyramidata*, Kob., n. var. ; PILSBRY in TRYON (619), xvi, p. 210.
- Pseudachatina daillyana*, West Africa ; PILSBRY in TRYON (619), xvi, p. 214, fig. : **n. sp.**
- Pseudoglossula prestoni*, p. 68, *gracilior*, p. 69, German East Africa ; SMITH, P. Malac. Soc. London vi, figg. : **n. spp.**
- Pseudotrochus moreletianus*, Desh., p. 228, *interstinctus*, Gould, p. 240, n. varr. ; PILSBRY in TRYON (619), xvi.
- Spiraxis cacahumilpensis* [apparently **n. sp.**], Mexico ; HERRERA, Mem. Soc. Ant. Alzate v, p. 219 [1891] : **n. sp.**
- Stenogyra reitteri* (Rosen MS.), Turkestan ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 87 : **n. sp.**
- Subulina lagariensis*, British East Africa ; SMITH, P. Malac. Soc. London vi, p. 69, fig. : *S. kassaiana*, Central Africa ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : **n. sp.**
- Tornatellina*, notes on Hawaiian species ; ANCEY (13).
- T. monodonta*, Japan ; PILSBRY & HIRASE, Nautilus xviii, p. 6 : *M. macromphala*, Maui and Oahu, p. 296, *cincta*, Hawaiian Is., p. 297, *abbreviata*, Maui, p. 298, *henshawi*, Hawaii, p. 299, *procerula*, p. 302, *subangulata*, *terebra*, p. 303, Maui, *pyramidata*, Hawaii, p. 304, *macroptychia*, Maui, p. 305, *fusca*, Hawaii, p. 306 ; ANCEY, J. Conchyl. li, figg. : **n. spp.**

SUCCINEIDÆ, VERONICELLIDÆ and ONCIDIIDÆ.

Notes on a new but unnamed genus (*Veronicellidæ*) ; COLLINGE, J. Malac. xi, p. 14.

Oncidiella flavescens, Chatham Is. ; WISELL, Zool. Jahrb. Syst. xx, p. 668, fig. : **n. sp.**

Succinea wrighti, Crosse, is a synonym of *S. lauta*, Gould ; ANCEY, J. Conchyl. lii, p. 306 : *S. casta*, n. varr. ; ANCEY, P. Malac. Soc. London vi, p. 117 : *S. oblonga*, white var. ; WRIGHT, J. Conch. xi, p. 96.

Succinea ikiana, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 117 : *S. brumpti*, River Omo ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : *S. kuhnsi*, p. 117, *tenerrima*, Hawaii, *apicalis*, p. 118, *tetragona*, Maui, *quadrata*, Hawaii, p. 119 ; ANCEY, P. Malac. Soc. London vi, figg. : **n. spp.**

BASOMMATOPHORA.

AURICULIDÆ, LIMNÆIDÆ and PHYSIDÆ.

Ameria plicaxis, Obi ; SYKES, J. Malac. xi, p. 92, fig. : **n. sp.**

Ancylus adhering to water-beetles ; JOHNSON (335) : Eastern American species ; WALKER (638) : *Ancylus* during the dry season in S. America ; BOETTGER (68).

Ancylus crequii, Lake Titicaca, Bolivia ; BAVAY, Bull. Soc. zool. France xxix, p. 156, fig. : **n. sp.**

Carychium pessimum, n. var. ; PILSBRY & HIRASE, Nautilus xvii, p. 119.

Carychium nipponense, Japan ; PILSBRY & HIRASE, op. cit. xviii, p. 7 : **n. sp.**

Gundlachia is an *Ancylus* which by forming an epiphragm has survived winter ; DALL (167).

Limnæa reflexa, n. varr. ; BAKER (26) : *L. decollata*, n. var. ; BAKER, Nautilus xviii, p. 62 : *L. truncatula*, n. var. ; BELLINI, J. Conch. xi, p. 38 : *L. maroccana*, figd. ; PALLARY, J. Conchyl. lii, p. 33 : *L. palustris*, n. var. ; LINDHOLM, Annuaire Mus. St. Petersb. viii, p. 339 : *L. lagotis*, n. var. ; ANDREAE (16).

Limnæa rochebruni (Germain), France ; ROCHEBRUNE, Bull. Mus. Paris x, p. 191, fig. : *L. randolphi*, Alaska ; BAKER, Nautilus xviii, p. 63 : *L. nimoulensis*, White Nile ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 141 : *L. mars*, p. 141, (*Gulnaria*) *whartoni*, (*G.*) *shantungensis*, (*G.*) *pettiti*, p. 142, Shantung ; JONES & PRESTON, P. Malac. Soc. London vi, figg. : **n. spp.**

Melampus flavus, Gmel., *coffeus*, L., n. varr. ; DAVIS (181).

Physopsis didieri, White Nile ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : **n. sp.**

Planorbis corneus, kidney, pericardium and heart ; PÖTZSCH (501) : *P. truncatus*, Miles, notes on ; BAKER (30) : *P. montanus*, d'Orb., carinate var. figd. ; BAVAY (40).

Planorbis bozasi, Lake Challa ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 141 : **n. sp.**

SIPHONARIIDÆ and AMPHIBOLIDÆ.

Ampullarina africana, Port Alfred ; SMITH, J. Malac. xi, p. 38, fig. : **n. sp.**

Siphonaria alternata, n. varr. ; DAVIS (181).

Siphonaria subatrata, *ruviana*, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 36, figg. : **n. spp.**

OPISTHOBRANCHIATA.

Opisthobranchs, free larvæ of ; MAZZARELLI (431).

Nervous system ; VAYSSIÈRE (629).

NUDIBRANCHIATA.

Notes on some Genera ; ELIOT (208, &c.).

Spawn of some Nudibranchs ; SMALLWOOD (569).

Nudibranchiata, nematocysts ; GROSVENOR (269) : ABRIC (2, 4) : LENDEN-FELD (394).

Variation of colour ; ABRIC (1).

Anatomy of several Nudibranchs ; VAYSSIÈRE (629).

Alloiodoris, **n. gen.** for *A. marmorata*, **n. sp.**, Tasmania ; BERGH (52), p. 41, fig.

Archidoris stellifera (Ihering), Gulf of Marseilles ; VAYSSIÈRE, J. Conchyl. lii, p. 130, fig. : *A. africana*, p. 361, *minor*, p. 362, E. Africa ; ELIOT, P. Zool. Soc. London 1903, ii : *A. violacea*, p. 31, *nanula*, p. 33, New Zealand ; BERGH (52), figg. : **n. spp.**

Asteronotus hemprichi, Ehrenberg, figd. ; ELIOT, P. Zool. Soc. London 1903, ii, p. 384.

Bornella digitata, Adams, *excepta*, Bergh, p. 102, radula ; ELIOT, op. cit. 1904, ii.

Bornella simplex, Zanzibar ; ELIOT, t. c. p. 103, fig. : **n. sp.**

Chromodoris reticulata, Pease, p. 386, figd., *elizabethina*, Bergh, **n. var.**, p. 392, *lineata*, Souleyet, **n. var.**, p. 397 ; ELIOT, P. Zool. Soc. London 1904, i : *C. (?) roseopicta*, Verrill, note on ; VERRILL, Tr. Connect. Ac. xi, p. 33.

Chromodoris sykesi, p. 387, *cavæ*, p. 388, *annulata*, p. 389, *splendens*, p. 390, *vicina*, p. 392, *nigrostriata*, p. 394, *inconspicua*, p. 398, (?) *flava*, p. 399, Zanzibar ; ELIOT, P. Zool. Soc. London 1904, i, several figd. : **n. spp.**

Coryphella californica, California ; BERGH (52), p. 6, fig. : **n. sp.**

Cuthona (?) bicolor, Japan ; BERGH (52), p. 3, fig. : **n. sp.**

Discodoris cærulescens, **n. subsp.**, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii, p. 365.

Discodoris dubia, p. 53, *egena*, p. 54, Tasmania ; BERGH (52), figg. : **n. spp.**

Doris planata, notes on ; ELIOT (207).

Doris giardi, Wimereux ; ABRIC, C.R. Soc. Biol. lvii, p. 232 : **n. sp.**

Elysia subornata, p. 29, *flava*, *picta*, p. 30, *papillosa*, p. 31, Bermudas ; VERRILL, Tr. Connect. Ac. xi, figg. : **n. spp.**

Facelina goslingii, Bermudas ; VERRILL, t. c. p. 34, fig. : **n. sp.**

Fiona, development of germ layers ; CASTEEL (99) : *F. marina*, early larval development ; CASTEEL (100).

Fracassa tuberculosa, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii, p. 371 : **n. sp.**

Halgerda willeyi, Loyalty Is., p. 372, *wasinensis*, E. Africa, p. 373 ; ELIOT, t. c. figg. : **n. spp.**

Hexabranchus plicatus, Red Sea ; HÄGG (278), p. 5, fig. : **n. sp.**

Homoiodoris nov. zealandia, New Zealand ; BERGH (52), p. 35, fig. : **n. sp.**

Kentodoris rubescens, Bergh, figd. ; ELIOT, P. Zool. Soc. London 1903, ii, p. 374.

Lamellidoris aureopuncte, p. 31, *miniata*, p. 32, Bermudas ; VERRILL, Tr. Connect. Ac. xi, figg. : **n. spp.**

Linguela variolosa, China Sea ; BERGH (52), p. 21, fig. : **n. sp.**

- Madrella aurantiaca*, Gulf of Marseilles ; VAYSSIÈRE, Ann. Mus. Marseille viii, p. 89, fig.: **n. sp.**
- Marionia pellucida*, E. Africa, *levis*, figd., p. 94, *ramosa*, p. 96, Zanzibar, *albotuberculata*, p. 97, *viridescens*, p. 98, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii : **n. spp.**
- Melibe pellucida*, Columbia R., Washington ; BERGH (52), p. 11, fig.: **n. sp.**
- Nembrotha cerulea*, E. Africa, p. 91, *affinis*, Zanzibar, p. 92, figd. ; ELIOT, P. Zool. Soc. London 1904, ii : **n. spp.**
- Notodoris minor*, Zanzibar ; ELIOT, t. c. p. 84, fig.: **n. sp.**
- Peltodoris angulata*, p. 365, *aurea*, p. 366, E. Africa ; ELIOT, op. cit. 1903, ii : **n. spp.**
- Peronodoris*, **n. gen.** for *P. cancellata*, **n. sp.**, Pacific Ocean ; BERGH (52), p. 45, fig.
- Platydorís pulcra* (sic), E. Africa, p. 377, *incerta*, p. 378, *papillata*, p. 379, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii : **n. spp.**
- Pleuroleura alba*, Zanzibar ; ELIOT, op. cit. 1904, ii, p. 104 : **n. sp.**
- Sclerodoris*, **n. gen.** for *Doris osseosa*, Kel., and *S. tuberculata*, p. 381, *minor*, *rubra*, p. 382, *coriacea*, p. 383, **n. spp.**, Zanzibar ; ELIOT, op. cit. 1903, ii, figg.: Genus is a synonym of *Peronodoris*, q. v. ; ELIOT, op. cit. 1904, i, p. 380.
- Sphærodores lævis*, Bergh, n. var. ; ELIOT, op. cit. 1904, i, p. 403.
- Staurodores verrucosa*, Cuv., figd. ; CUÉNOT (159).
- Staurodores depressa*, E. Africa, p. 363, *calva*, Zanzibar, p. 364 ; ELIOT, P. Zool. Soc. London 1903, ii : **n. spp.**
- Thordisa villosa*, figd. ; ELIOT (208).
- Thordisa stellata*, *crosslandi*, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii, p. 368, figg.: **n. spp.**
- Trevelyana ceylonica*, Kelaart, p. 86, *crocea*, Bergh, p. 87, *bicolor* (?), Alder and Hancock, figd. ; ELIOT, op. cit. 1904, ii.
- Trevelyana coccinea*, E. Africa ; ELIOT, t. c. p. 85, fig.: **n. sp.**
- Trippa monsoni*, Zanzibar ; ELIOT, op. cit. 1903, ii, p. 371, fig.: **n. sp.**
- Tritonia incerta*, Pacific Ocean ; BERGH (52), p. 24, fig.: **n. sp.**

TECTIBRANCHIATA (including PTEROPODA).

- Anatomy of some Gymnosomate Pteropods ; KWIETNIEWSKI (377).
- Archaic form of Thecosomate Pteropod ; PELSENEER (476).
- Species of Gymnosomata and Thecosomata from Siboga Expedition, recorded last year, fully described and figured with localities and anatomy ; TESCH (610).
- Actæon*, note on anatomy ; MAZZARELLI (430): *A. globulinus*, Forbes, figd. ; SYKES, P. Malac. Soc. London vi, p. 29.
- Actæon pulchrior*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 168, fig.: **n. sp.**
- Akera bullata*, anatomy ; VAYSSIÈRE (629).
- Aplysia*, the heart ; STRAUB (598): Notes on British forms ; HUNT (315): *A. punctata*, chromosomes during maturation of the egg ; JANSSENS & ELRLINGTON (329).
- Atys pransa*, New South Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 191, fig.: *A. submalleata*, off the Andamans ; SMITH, Ann. Nat. Hist. xiv, p. 6 : **n. spp.**
- Bulla striatula*, Forbes, figd. ; SYKES, P. Malac. Soc. London vi, p. 37.
- Bullina elongata*, Jeffreys, figd. ; SYKES, t. c. p. 36.
- Corolla (Cymbuliopsis) spectabilis*, Dall, anatomy ; HEATH & SPAULDING (289).
- Cylichna hoernesii*, Weink., figd. ; SYKES, P. Malac. Soc. London vi, p. 36.

Cylicligna pithiscus, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 168, fig. : *C. obscura*, off S. of Ireland ; SYKES, t. c. p. 37, fig. : *C. andamanica*, off the Andamans ; SMITH, Ann. Nat. Hist. xiv, p. 6 : **n. spp.**

Cyliclinopsis, n. sect. of *Cylicligna*, type *C. acrotoma*, COSSM. ; COSSMANN (140), p. 118.

Desmopteris papilio, Chun, anatomy and systematic position ; MEISENHEIMER (432).

Dolabrifera virens, Bermudas ; VERRILL, Tr. Connect. Ac. xi, p. 24, fig. : **n. sp.**

Haminea solitaria, anatomy, &c. ; SMALLWOOD (570) : Maturation, fertilization, &c. ; SMALLWOOD (571).

Notarchus brevipes, Red Sea ; HÄGG (278), p. 1, fig. : **n. sp.**

Oscanius membranaceus, nervous system ; DISTASO (192).

Peraclis reticulata, D'Orb., n. var. ; TESCH (610), p. 15.

Philine punctata, anatomy ; VAYSSIÈRE (629).

Philine sykesii, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 60, fig. : **n. sp.**

Placobranchopsis niveus, Bermudas ; VERRILL, Tr. Connect. Ac. xi, p. 27, fig. : **n. sp.**

Pleurobranchia meckeli, nervous system ; DISTASO (192).

Retusa excavata, lactea, figd. ; SYKES, P. Malac. Soc. London vi, p. 31.

Retusa dilatata, Gulf of Gabes ; PALLARY, J. Conchyl. lii, p. 215, fig. :

R. marshalli, off Portugal ; SYKES, P. Malac. Soc. London vi, p. 31,

fig. : *R. bysma*, Gulf of Oman ; MELVILL, t. c. p. 168, fig. : **n. spp.**

Runcina inconspicua, Bermudas ; VERRILL, Tr. Connect. Ac. xi, p. 28, fig. : **n. sp.**

Scaphander ceylanica, off Ceylon ; SMITH, Ann. Nat. Hist. xiv, p. 5 : **n. sp.**

Tethys (Aplysia) morio, p. 25, *tarda*, p. 26, Bermudas ; VERRILL, Tr. Connect. Ac. xi, figg. : **n. spp.**

Tornatina insignis, p. 36, *decorata*, p. 37, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**

NUCLEOBRANCHIATA.

Anatomy of some Heteropoda ; VAYSSIÈRE (627).

Cardiapoda richardi, Atlantic Ocean ; VAYSSIÈRE (627), p. 24, fig. : **n. sp.**

Carinaria mediterranea, Per. & Les., n. var. ; VAYSSIÈRE (627), p. 17.

Carinaria grimaldii, p. 18, *pseudorugosa*, p. 20, Atlantic Ocean ; VAYSSIÈRE (627), figg. : **n. spp.**

Firola souleyeti, p. 37, *gegenbauri*, p. 39, Atlantic Ocean ; VAYSSIÈRE (627), figg. : **n. spp.**

Firoloida kowalewskyi, Atlantic Ocean ; VAYSSIÈRE (627), p. 45, fig. : **n. sp.**

PROSOBRANCHIATA.

PECTINIBRANCHIATA.

TOXOGLOSSA.

TEREBRIDÆ, CONIDÆ, PLEUROTOMIDÆ, and CANCELLARIIDÆ.

Ancistrosyrinx orientis, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 56, fig. : **n. sp.**

Cancellaria pergradata, South Australia ; VERCO, Tr. R. Soc. S. Austral. xxviii, p. 142, fig. : **n. sp.**

- +*Cancellariella*, **n. subgen.** of *Cancellaria*, type *C. neritoidea*, **n. sp.**, Miocene, Maryland; MARTIN (425), p. 168.
- Clathromangilia* (?) *strigilata*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 222, fig.: **n. sp.**
- Clathurella perlissa*, off the Andamans; SMITH, Ann. Nat. Hist. xiii, p. 460: *C. polyhymnia*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 165, figg.: *C. bulleni*, Ceylon; PRESTON, J. Malac. xi, p. 75, fig.: *C. chichijimana*, *centrosa*, p. 11, *lischkeana*, p. 12, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: *C. crassilirata*, Port Alfred; SMITH, J. Malac. xi, p. 27, fig.: *C. amphiblestrum*, p. 58, *epixantha*, *hedleyi*, p. 59, Persian Gulf; MELVILL, P. Malac. Soc. London vi, figg.: **n. spp.**
- +*Cochlespiropsis*, **n. gen.** for *C. engonata*, Conrad, and *C. blanda*, **n. sp.**; CASEY, Tr. Ac. St. Louis xiv, p. 143.
- Conus coromandelicus* is a *Conorbis*, with notes; MELVILL, P. Malac. Soc. London vi, p. 170.
- Cythara nevilliana*, Ceylon; PRESTON, J. Malac. xi, p. 75, fig.: **n. sp.**
- Daphnella cassandra*, New South Wales and Tasmania; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 187, fig.: *D. eulimenes*, Gulf of Oman; MELVILL, J. Malac. xi, p. 84, fig.: *D. radula*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 8, fig.: *D. dea*, *lucasi*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 167, figg.: **n. spp.**
- Drillia worthingtoni*, off Andaman Islands; SMITH, Ann. Nat. Hist. xiii, p. 460: *D. streptonotus*, p. 7, *albiguttata*, p. 8, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: *D. thetis*, *subcontracta*, p. 26, *albonodulosa*, *prætermissa*, *nivosa*, p. 27, Port Alfred; SMITH, J. Malac. xi, figg.: **n. spp.**
- +*Eoclathurella*, **n. gen.** for *E. jacksonica*, *obesula*, **n. spp.**, Eocene; CASEY, Tr. Ac. St. Louis xiv, p. 166.
- +*Eodrillia*, **n. gen.** for *Pleurot. depygis*, Conrad, &c.; CASEY, t. c. p. 159.
- +*Eosurcula*, **n. gen.** for *Pleurot. moorei*, Gabb, &c.; CASEY, t. c. p. 145.
- Exechoptychia*, Cossm., is a synonym of *Cancellaria*; COSSMANN (140), p. 120.
- +*Fusitoma*, **n. gen.**, type *Fusus siphio*; CASEY, Tr. Ac. St. Louis xiv, p. 163.
- Genota*, note on species; RAYMOND, Nautilus xviii, p. 15.
- Ginnania tapruvrensis*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 218, fig.: **n. sp.**
- Glyphostoma siren*, Port Alfred; SMITH, J. Malac. xi, p. 28, figg.: **n. sp.**
- +*Glyptotoma*, **n. gen.** for *Pleurotoma crassiplicata*, Gabb, &c.; CASEY, Tr. Ac. St. Louis xiv, p. 140.
- Helenella*, **n. gen.** for *Pleurot. multigranosa*, Smith, and *H. insolens*, **n. sp.**, p. 168, St Helena; CASEY, t. c. p. 167.
- +*Hemisurcula*, **n. gen.**, type *Pleurot. silicata*, Aldr.; CASEY, t. c. p. 150.
- Homotoma mirabilis*, p. 219, *bracteata*, p. 220, Gulf of Gabes; PALLARY, J. Conchyl. lii, figg.: **n. spp.**
- +*Leptosurcula*, **n. gen.** for *Pleurot. beadata*, Harris; CASEY, Tr. Ac. St. Louis xiv, p. 157.
- Lophiotoma*, **n. gen.** for *Pleurotoma tigrina*, Lamk., &c., with *L. microstieta*, **n. sp.**, Philippine Is.; CASEY, t. c. p. 130.
- +*Lyrosurcula*, **n. gen.** for *L. elegans*, **n. sp.**, Eocene, &c.; CASEY, t. c. p. 156.
- Mangilia cinnamomea*, **n. subsp.**; PILSBRY, P. Ac. Philad. 1904, p. 10.
- Mangilia kochi*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 221, fig.: *M. posidonia*, Gulf of Oman; MELVILL, J. Malac. xi, p. 84, fig.: *M. alfredi*, Port Alfred; SMITH, t. c. p. 29, fig.: *M. adamantina*, Gulf of Oman, *aglaia*, Persian Gulf, p. 165, *apollinea*, *barbiton*, *callistephana*, Gulf of Oman, p. 166, *koweitensis*, Persian Gulf, p. 167; MELVILL, P. Malac. Soc. London vi, figg.: *M. pura*, *semicarinata*, p. 9, *kamakurana*, (*Cythara*) *hirasei*, p. 10, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: *M. bathmis*, p. 57, *cephora*, (*Glyphostoma*) *pycnochila*, p. 58, Persian Gulf; MELVILL, P. Malac. Soc. London vi, figg.: **n. spp.**

- Megasurcula*, **n. gen.** for *Surcula carpenteriana*, Gabb, &c.; CASEY, Tr. Ac. St. Louis xiv, p. 147.
- +*Microsurcula*, **n. gen.**, type *M. nucleola*, **n. sp.**, Eocene; CASEY, t. c. p. 154.
- Mitromorpha volva*, Sby., var.; SMITH, J. Malac. xi, p. 31.
- Orthosurcula*, **n. gen.** for *Pleurot. longiforma* (sic), Aldr., and *Surcula transversaria*, Lamk.; CASEY, Tr. Ac. St. Louis xiv, p. 151.
- Parviterebra*, **n. gen.**, type *P. paucivolvis*, **n. sp.**, Japan; PILSBRY, P. Ac. Philad. 1904, p. 5, fig.
- Philbertia papillosa*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 220, fig.: **n. sp.**
- Pleurotomidæ*, on classification; CASEY (98): *P. travancorica*, Smith, **n. var.**; SMITH (579).
- Pleurotoma trypanodes*, Arabian Sea; MELVILL, P. Malac. Soc. London vi, p. 57, fig.: *P. (Surcula) margaritæ*, off the Andamans; SMITH, Ann. Nat. Hist. xiii, p. 458: *P. (Oligotoma) patricia*, (*Surcula*) *halicyria*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 164, figg.: *P. (Genota) stearnsiana*, p. 1, (*Antiplanes*) *catalinæ*, p. 2, California; RAYMOND, Nautilus xviii : **n. spp.**
- +*Protosurcula*, **n. gen.**, type *Pleurot. gabbi*, Conrad; CASEY, Tr. Ac. St. Louis xiv, p. 144.
- +*Ruscula*, **n. gen.** for *Fusus plicatus*, Lea, and *R. extricata*, **n. sp.**; CASEY, t. c. p. 161.
- +*Surculoma*, **n. gen.** for *Pleurot. tabulata*, Conr., &c.; CASEY, t. c. p. 153.
- Terebra histrio*, Desh., is West African; ANGEY, Nautilus xviii, p. 21: *T. hedleyi*, Tate, is an unnecessary name; SMITH (580).
- Terebra suspensa*, Port Alfred; SMITH, J. Malac. xi, p. 30, fig.: *T. hedleyi*, p. 3, *hizenensis*, *awajiensis*, p. 4, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: **n. spp.**
- Tomopleura*, **n. gen.**, type *Pleurotoma nivea*, Phil.; CASEY, Tr. Ac. St. Louis xiv, p. 138.
- +*Tropisurcula*, **n. gen.** for *Drillia caseyi*, Aldr., and *T. crenula*, **n. sp.**; CASEY, t. c. p. 153.
- +*Varicobela*, **n. gen.**, type *Strombus smithi*, Aldr.; CASEY, t. c. p. 162.

RACHIGLOSSA.

OLIVIDÆ, MARGINELLIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Ancilla albozonata, reevei*, Port Alfred; SMITH, J. Malac. xi, p. 29, figg.: **n. spp.**
- Marginella (Cryptospira) robusta*, Ascension Island; SOWERBY, P. Malac. Soc. London vi, p. 175, fig.: *M. munda, pura*, p. 31, *differens, dulcis, pseustes*, p. 32, Port Alfred; SMITH, J. Malac. xi, figg.: **n. spp.**
- Mitra stephanucha*, Melv., note on with **n. var.**; MELVILL, J. Malac. xi, p. 86.
- Mitra hirasei*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 12, fig.: *M. tune-tana*, Gulf of Gabes; PALLARY, Ann. Mus. Marseille viii, No. 1, p. 8, fig.: *M. townsendi*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 163, fig.: **n. spp.**
- Oliva gibbosa*, Born, variation; MELVILL (435).
- Thala ogasawarana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 13, fig.: *T. ceylanica*, Ceylon; PRESTON, J. Malac. xi, p. 76, fig.: **n. spp.**
- Volvaria arena*, **n. var.**; DAVIS (181).
- Voluta brazieri*, Cox, is, from the type, probably a monstrosity of *V. deliciosa*, Montrz.; SMITH, P. Malac. Soc. London vi, p. 178.

FASCIOLARIIDÆ, TURBINELLIDÆ, BUCCINIDÆ, NASSIDÆ,
COLUMBELLIDÆ, MURICIDÆ, and CORALLIOPHILIDÆ.

- Amgela corniculum*, n. subsp.; PALLARY, J. Conchyl. lii, p. 228.
- Buccinum inclitum*, *chishimanum*, Kuril Is.; PILSBRY, Nautilus xviii, p. 87 : **n. spp.**
- Bullia trifasciata*, Port Alfred; SMITH, J. Malac. xi, p. 34, fig.: *B. (Pseudostrombus) strenaria*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 51, fig. : **n. spp.**
- Caducifer*, Dall (p. 77), belongs to *Buccinidæ*; PILSBRY & VANATTA (498).
- +*Clavellofus*, **n. gen.**, type *C. spiratus*, **n. sp.**, Eocene, Paris Basin; GRABAU, Smithson. Collect. xlv, p. 99.
- Columbella pyramidalis*, Sby., note on; SMITH, J. Malac. xi, p. 30: *C. turturina*, p. 13, *albinodulosa*, p. 14, n. subsp.; PILSBRY, P. Ac. Philad. 1904: *C. terpsichore*, *fauroti*, notes on; FISCHER, J. Conchyl. lii, p. 59.
- Columbella (Astyris) agatha*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 52, fig.: *C. liocyma*, p. 14, *somnium*, *kakajimana*, p. 15, *divaricata*, p. 16, Japan; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**
- Cominella (?) sulcata*, Sby., is probably a *Daphnella*; SMITH, J. Malac. xi, p. 28: *C. unifasciata*, Sby., is a synonym of *Purpura castanea*, Dkr.; SMITH, t. c. p. 33.
- Coralliophila jeffreysi*, n. var.; PILSBRY, P. Ac. Philad. 1904, p. 16.
- Coralliophila dissimulans*, Ceylon; PRESTON, J. Malac. xi, p. 77, fig. : **n. sp.**
- +*Cosmolithes*, **n. gen.**, type *Fusus uniplicatus*, Lam.; GRABAU, Smithson. Collect. xlv, p. 142.
- Cyclonassa vayssierei*, Bizerta; PALLARY, Ann. Mus. Marseille viii, No. 1, p. 9, fig. : **n. sp.**
- Cyllene japonica*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 19, fig. : **n. sp.**
- +*Falsifusus*, **n. gen.**, type *Fusus meyeri*, Aldr.; GRABAU, Smithson. Collect. xlv, p. 80.
- Fasciolaria*, amitosis in the embryo; OSBORN (461, 462).
- +*Fulgurofus*, **n. gen.**, type *Fusus quercollis*, Harris; GRABAU, Smithson. Collect. xlv, p. 86.
- Fusidæ*, notes on family, genera, protoconch, &c.; GRABAU (265): *F. longicaudus*, Bory, p. 28, *nodosoplicatus*, Dkr., p. 32, *perplexus*, A. Ad., p. 33, *dupetit-thouarsi*, Kien., p. 46, n. varr.; GRABAU (265).
- Fusus suboblitus*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 18, fig.: *F. brasiliensis*, Brazil; GRABAU, Smithson. Collect. xlv, p. 66, fig.: *F. cingulatus*, Port Alfred; SMITH, J. Malac. xi, p. 30, fig. : **n. spp.**
- Heilprinia*, **n. gen.**, type *Fusus caloosaensis*, Heilprin; GRABAU, Smithson. Collect. xlv, p. 87.
- Latiaxis kieneri*, apparently **n. n.** for *Murex cariniferus*, auct. non Sby.; HIDALGO (305), p. 23.
- Maculotriton*, Dall (p. 78), belongs to *Muricidæ*, with n. var. of *M. bracteatus*, Hinds; PILSBRY & VANATTA (498).
- Megalatractus*, notes on, with anatomy; KESTEEVEN (350).
- Metula mitrella*, Ad. & Rve., is a synonym of *M. hindsi*, Ad.; SMITH (579).
- Mitrella spelta*, Monts., figd.; PALLARY, J. Conchyl. lii, p. 229.
- Murex trunculus*, n. var.; PALLARY (468): *M. brandaris*, note on variation, with n. varr.; DAUTZENBERG (175).
- Murex multispinosus*, Philippines; SOWERBY, P. Malac. Soc. vi, p. 7, fig.: *M. (Pteronotus) exquisitus*, Hab. incert.; SOWERBY, t. c. p. 176, fig.: *M. (Ocenebra) sykesi*, Ceylon; PRESTON, J. Malac. xi, p. 76, fig. : **n. spp.**
- Nassa semiplicata*, n. subsp.; PILSBRY, P. Ac. Philad. 1904, p. 20: *N. ferussaci*, n. subsp.; PALLARY, J. Conchyl. lii, p. 226.
- Nassa pacilosticta*, Port Alfred; SMITH, J. Malac. xi, p. 33, fig.: *N.*

- (*Phrontis*) *siva*, Ceylon, (*P.*) *gangetica*, Calcutta; PRESTON, t. c. p. 76, fig. : **n. spp.**
- Ocenebra monoptera*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 17, fig. : **n. sp.**
- Ocenebrina edwardsi*, n. var.; PALLARY, J. Conchyl. lii, p. 231.
- Phos tabidus*, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 191, fig. : **n. sp.**
- Pseudofusus locardi*, **n. n.** for *P. rusticulus*, Locard non Monts.; PALLARY, J. Conchyl. lii, p. 225.
- +*Psilocochlis*, **n. subgen.** of *Turbinella* for *T. m'Callie*, **n. sp.**, Eocene, Georgia; DALL, Nautilus xviii, p. 9.
- Purpura texturata*, Port Alfred; SMITH, J. Malac. xi, p. 32, fig. : *P. tosana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 17, fig. : **n. spp.**
- +*Rhopalithes*, **n. gen.**, type *Fusus noe*, Lam.; GRABAU, Smithson. Collect. xlv, p. 135.
- Sistrum morus*, n. var.; PILSBRY, P. Ac. Philad. 1904, p. 18.
- Tritonidea tosana*, Japan; PILSBRY, t. c. p. 19, fig. : **n. sp.**
- Trophon*, Magellan fauna reviewed; STREBEL (599): *T. truncatus*, n. var.; JENSEN (334).
- Trophon ohlini*, p. 203, *pæssleri*, p. 213, *elongatus*, p. 217, *pseudoelongatus*, p. 220, *albus*, p. 221, *obesus*, *acuminatus*, p. 222, *fenestratus*, p. 225, *hoylei*, p. 227, *brucei*, p. 230, *ornatus*, p. 231, *standeni*, p. 232, *couthouyi*, p. 236, *elegans*, p. 241, *ringei* (Pfeffer), p. 242, Magellan Province; STREBEL, Zool. Jahrb. Syst. xxi, figg. : **n. spp.**

TÆNIOGLOSSA.

- LOTORIIDÆ, COLUMBELLINIDÆ, CASSIDIDÆ, DOLIIDÆ, CYPRÆIDÆ, STROMBIDÆ, APORRHAIIDÆ, and STRUTHIOLARIIDÆ.
- Aporrhaidæ*, classification; COSSMANN (140).
- Aquillus* and allies, notes on, as on *A. labiosus* (Wood); PILSBRY, P. Ac. Philad. 1904, p. 21.
- Caducifer*, **n. sect.** of *Colubraria*, type *Triton truncatus*, Hinds; DALL, Smithson. Collect. xlvii, p. 136: Belongs to *Buccinidæ*; PILSBRY & VANATTA (498).
- Cassidaria echinophora*, large form; KOBELT (360).
- Cassidea sinuosa*, South Australia; VERCO, Tr. R. Soc. S. Austral. xxviii, p. 141, fig. : **n. sp.**
- Cassis paucirugis*, Menke, note on; KENYON (349).
- Cassis* (*Semicassis*) *fortisulcata*, Hawaiian Is.; SMITH, P. Malac. Soc. London vi, p. 21, fig. : **n. sp.**
- Columbellinidæ*, classification; COSSMANN (140).
- Craspedotriton*, **n. sect.** of *Bufonaria*, type *Triton convolutus*, Brod.; DALL, Smithson. Collect. xlvii, p. 119.
- Cypræida* of Persian Gulf, &c., with n. varr. of *C. caurica*, *ocellata*, *pulchella*; MELVILL & STANDEN (440): *C. onyx*, malformed; MELVILL, P. Malac. Soc. London vi, p. 3: *C. umbilicata*, white var.; SOWERBY, t. c. p. 1: *C. caputanguis*, Phil., type is at Santiago; BYNE, J. Conch. xi, p. 57.
- Dentomochilus*, **n. gen.**, type *Strombus ornatus*, Desh.; COSSMANN (140), p. 38.
- +*Dilatilabrum*, **n. n.** for *Oncoma*, Mayer non Fieb.; COSSMANN (140), p. 12.
- Dolium magnificum*, China Sea; SOWERBY, P. Malac. Soc. London vi, p. 7, fig. : **n. sp.**
- Egyrina*, **n. n.** for *Gyrina*, Schum., non *Gyrinus*, L.; DALL, Smithson. Collect. xlvii, p. 132.
- Eutritonium*, **n. gen.**, type *Murex tritonis*, L.; COSSMANN (140), p. 123.

Lotorium spengleri, eggs of; HEDLEY (292).

Lotorium (Colubraria) concinnatum, Persian Gulf, &c.; MELVILL, P. Malac. Soc. London vi, p. 51, fig.: **n. sp.**

Maculotriton, **n. sect.** of *Colubraria*, type *Triton bracteatus*, Hinds; DALL, *Smithson. Collect.* xlvii, p. 136: Belongs to *Muricidae*; PILSBRY & VANATTA (498).

+*Maussenetia*, **n. sect.** of *Chenopus*, type *M. staadti*, **n. sp.**, Tertiary, France; COSSMANN (140), p. 71.

Monostiolum, **n. sect.** of *Colubraria*, type *Triton swifti*, Tryon; DALL, *Smithson. Collect.* xlvii, p. 136.

Paralagena, **n. n.** for *Lagena*, Mörch non Walker; DALL, t. c. p. 132.

Phrygiomurex, **n. subgen.** of *Colubraria*, type *Triton sculptilis*, Rve.; DALL, t. c. p. 137.

+*Pietteia*, **n. subgen.** of *Dicroloma*, type *Rostellaria hamus*, Desh.; COSSMANN (140), p. 90.

+*Quadrinererus*, **n. subgen.** of *Chenopus*, type *Pterocera ornata*, Buv.; COSSMANN (140), p. 61.

Ranellidae, review of; DALL (171).

Septidae (or *Lotoriidae*), review of; DALL (171).

Strombidae, classification; COSSMANN (140).

Struthiolariidae, classification; COSSMANN (140).

+*Struthiolariopsis*, **n. gen.**, type *Fusus ferrieri*, Phil., Tertiary, Chili; WILCKENS, N. Jahrb. Min. B.B. xviii, p. 208.

Teniola, **n. sect.** of *Colubraria*, type *Triton decollatus*, Sby.; DALL, *Smithson. Collect.* xlvii, p. 137.

Tritoniscus, **n. sect.** of *Cymatium*, type *Triton laroisii*, Petit; DALL, t. c. p. 134.

Tritonocauda, **n. sect.** of *Cymatium*, type *Murex caudatus*, Gmel.; DALL, t. c. p. 133.

Turritriton, **n. sect.** of *Cymatium*, type *Triton gibbosus*, Brod.; DALL, t. c. p. 133.

CERITHIIDÆ, PLANAXIDÆ, VERMETIDÆ, TURRITELLIDÆ, and CÆCIDÆ.

Bittium caudatum, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 161 fig.: **n. sp.**

Bittium furvum, Watson, is the young of *Cerithium icarus*, Bayle; HEDLEY (292).

Cæcum digitulum, New Zealand; HEDLEY, *Rec. Austral. Mus.* v, p. 94, fig.: **n. sp.**

Cerithium trailli, **n. subsp.**; PILSBRY, P. Ac. Philad. 1904, p. 25.

Cerithium sykesi, Adriatic; BRUSINA, *Nachrbl. Deutsch. malak. Ges.* 1904, p. 167: *C. subscalatum*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 25, fig.: *C. albocoopertum*, Bermuda; DAVIS, *Nautilus* xvii, p. 129, fig.: *C. anembatum, pervicax*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 161, figg.: **n. spp.**

+*Discovermetulus*, **n. gen.**, type *D. pissarroi*, **n. sp.**, Tertiary, France; ROVERETO, *Bull. Soc. geol. Ital.* xxiii, p. 68.

Mathilda carystia, figd.; MELVILL, J. Malac. xi, p. 84.

Pirenella conica, **n. subsp.**; PALLARY, J. *Conchyl.* lii, p. 232.

Planaxis brasilianus, Lam., notes on; HEDLEY (292).

Stephopoma nucleogranosum, South Australia; VERCO, *Tr. R. Soc. S. Austral.* xxviii, p. 143, fig.: **n. sp.**

Streblaceras cygnicollis, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 189, fig.: **n. sp.**

Trifora concatenatu, Gulf of Oman; MELVILL, P. Malac. Soc. London vi,

- p. 162, fig.: *T. fuscescens*, *fuscomaculata*, *convexa*, Port Alfred; SMITH, J. Malac. xi, p. 37, figg.: **n. spp.**
Triphora princeps, p. 174, *smithi*, p. 175, Hab. incert.; SOWERBY, P. Malac. Soc. London vi, figg.: **n. spp.**
Turritella illustris, Persian Gulf; MELVILL, J. Malac. xi, p. 81, fig.: **n. sp.**

MELANIIDÆ, PSEUDOMELANIIDÆ, LITTORINIDÆ, and FOSSARIDÆ.

- Burtonilla*, **n. gen.** for *Turbonilla* (?) *terebriformis*, Smith; SMITH, P. Malac. Soc. London vi, p. 97.
Couthouyia corrugata, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 95, fig.: **n. sp.**
Fossarus (*Couthouyia*) *quinquecarinalis*, (*C.*) *thelacme*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 54, figg.: **n. spp.**
Giraudia minor, *tanganyicensis*, figd.; SMITH, t. c. p. 96.
Lacuna globosa, Bay of Bengal; SMITH, Ann. Nat. Hist. xiii, p. 472: **n. sp.**
Lechaptosisia ponsonbyi, figd.; SMITH, P. Malac. Soc. London vi, p. 94.
Littorina rudis, habits; BOHN (71, 72).
Melania libertina, **n. var.**; PILSBRY & HIRASE, Nautilus xviii, p. 9.
Melania morti, p. 13, *cingulifera*, p. 14, New Hebrides; SYKES, P. Malac. Soc. London vi, figg.: *M. vara*, Java; BULLEN, t. c. p. 110, fig.: *M. hahajimana*, Japan; PILSBRY & HIRASE, Nautilus xviii, p. 8: *M. (Plotia) schneeii*, Marshall Is.; BOETTGER, Zool. Jahrb. Syst. xx, p. 408: *M. ceruginosa*, Java, *dulcis*, Yunnan, *fortitudinis*, p. 51, Java, *lauta*, p. 52, Yunnan; FULTON, J. Malac. xi, figg.: **n. spp.**
Melanopsis, **n. varr.** with fig. of *M. mourebeyensis*; PALLARY (466).
Melanopsis hungarica, Hungary; KORMOS, Allatt. Kozl. Magyar Tars. iii, p. 107, fig.: **n. sp.**
+*Pauluccia*, "**nov. Melanopsidarum subgen.**" for *P. boettgeri*, **n. sp.**, Tertiary, S. Europe; BRUSINA (88), p. viii.
Stanleya rotundata, Lake Tanganyika; SMITH, P. Malac. Soc. London vi, p. 93: **n. sp.**

SOLARIIDÆ, RISSOIDÆ, HYDROBIIDÆ, VIVIPARIDÆ,
 VALVATIDÆ, AMPULLARIIDÆ, and ASSIMINEIDÆ.

- Amnicola positura*, Petterd, is a synonym of *Hydrobia brazieri*, Smith; HEDLEY (292).
Amnicola augustina, Florida; PILSBRY, Nautilus xvii, p. 113: **n. sp.**
Ampullaria and allied groups, notes on; DALL (165).
Assiminea norburyi, Lin Chao; JONES & PRESTON, P. Malac. Soc. London vi, p. 147, fig.: **n. sp.**
Bythinia richmondiana, Petterd, and *Pupa anodonta*, Musson & Hedley, are synonyms of *Hydrobia petterdi*, Smith; HEDLEY (292).
Emmericia, notes on, with new names; BRUSINA (89).
Epigrus simsoni, Tate & May, is a synonym of *E. ischnus*, Tate; HEDLEY (292).
Epigrus protractus, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 185, fig.: **n. sp.**
Fenella xanthacme, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 56, fig.: **n. sp.**
Jullienia carinata, Yunnan; FULTON, J. Malac. xi, p. 52, fig.: **n. sp.**
Limnopomus, **n. sect.** of *Ampullaria*, type *A. columellaris*, Gould; DALL, J. Conch. xi, p. 54.
+*Morphotropis*, **n. gen.** for *M. tremulans*, Barr., &c., Silurian, Bohemia; PERNER (477), Explan. pl. lxxvii.

- +*Pachystrophia* (Koken MS.), **n. gen.**, type *P. deveuxa*, Eichw., sp., Silurian; PERNER (477), Explan. pl. lxxiii.
- Paludestrina taylora*, habits and reproduction; JACKSON & TAYLOR (326): *P. culminea*, d'Orb. = *P. andecola*, d'Orb., figd.; BAVAY (40).
- Paludestrina popoensis*, Lake Popo, Bolivia; BAVAY, Bull. Soc. zool. France xxix, p. 154, fig.: **n. sp.**
- +*Pleuromphalus*, **n. gen.** for *P. seductor*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxxvii.
- +*Prosolarium*, **n. gen.** for *P. procerum*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxii.
- Pyrgula neveui*, Lake Titicaca, Bolivia; BAVAY, Bull. Soc. zool. France xxix, p. 155, fig.: **n. sp.**
- +*Rhabdospira*, **n. gen.** for *R. bifrons*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxxv.
- Rissoa elata*, nervous system; QUINTARET (507): *R. monodonta*, n. var., *spongicola*, Monts., figd.; PALLARY, J. Conchyl. lii, p. 234: *R. woodsi*, **n. n.** for *R. cyclostoma* var. *rosea*, Woods, which is a species; PRITCHARD & GATLIFF, P. Soc. Victoria xiv, p. 104 [omitted, 1902]: *R. agnewi*, Woods, note on; HEDLEY (292).
- Rissoa tokyoensis*, *ogasawarana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 26, figg.: *R. suteri*, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 96, fig.: *R. integella*, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 185, fig.: *R. (Scrobs) columen*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 53, fig.: *R. perspecta*, *conspicua*, Port Alfred; SMITH, J. Malac. xi, p. 35, fig.: **n. spp.**
- Rissoina tridentata*, Mich., note on with synonymy; PILSBRY, P. Ac. Philad. 1904, p. 28.
- Rissoina alfredi*, Port Alfred; SMITH, J. Malac. xi, p. 35, fig.: *R. (Phosinella) phormis*, Gulf of Oman; MELVILL, t. c. p. 80, fig.: *R. rex*, *mater-insulae*, (*Rissolina*) *levicostulata*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 27, figg.: **n. spp.**
- Seguenziella*, **n. n.** for *Taramellia*, Seguenza non Campana; SACCO (546), p. 123.
- +*Sinutropis*, **n. gen.** for *S. interrumpens*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxxvii.
- Solarium admirandum*, figd.; MELVILL, J. Malac. xi, p. 84.
- Somatogyrus hinkleyi*, *constrictus*, p. 135, *nanus*, p. 136, *umbilicatus*, *coosensis*, p. 137, *obtusius*, *crassus*, p. 138, Alabama, *georgianus*, p. 139, Georgia and Alabama, *pennsylvanicus*, p. 140, Pennsylvania, *virginicus*, p. 141, Virginia, *pilsbryanus*, p. 142, Alabama; WALKER, Nautilus xvii, figg.: **n. spp.**
- Stenothyra formosana*, Formosa; PILSBRY & HIRASE, Nautilus xviii, p. 8: **n. sp.**
- Stiva*, **n. gen.** for *S. ferruginea*, **n. sp.**, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 192, fig.
- Taramellia*, Seguenza, renamed *Seguenziella*, q. v.
- Valvata piscinalis*, n. var.; ANDREAE (16).
- Valvata maroccana*, N. W. Africa; PALLARY, J. Conchyl. lii, p. 41, fig.: *V. (Cincinnati) gejeri*, Bavaria; MENZEL, Nachrbl. Deutsch. malak. Ges. 1904, p. 78, fig.: **n. spp.**
- Vitrella*, review of Wurtemberg fauna, with n. varr.; GEYER (250): *V. quenstedtii*, Clessin, anatomy; SEIBOLD (553).
- Vitrella putei*, p. 317, *exigua*, *labiata*, p. 320, *francoia*, p. 323, Wurtemberg; GEYER, Jahresh. Ver. Wurttemb. lx, figg.: **n. spp.**
- Vivipara rouyeri*, Java; BULLEN, P. Malac. Soc. London vi, p. 110, fig.: **n. sp.**

CYCLOPHORIDÆ and CYCLOSTOMATIDÆ.

- Alycaeus awaensis*, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 117 : *A. oshimanus*, Japan ; PILSBRY & HIRASE, op. cit. xviii, p. 7 : *A. purus*, *tokunoshimanus*, p. 617, *laevicervix*, p. 618, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
- Angigaster*, **n. sect.** of *Diplommatina*, type *D. vespa*, **n. sp.**, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 619.
- Cataulus marginatus*, Pfr., *nerilli*, Sykes, n. varr. ; FULTON (238).
- Cataulus rugosa*, *sykesi*, Ceylon ; FULTON, Ann. Nat. Hist. xiii, p. 452 : **n. spp.**
- Cyathopoma iota*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 619 : **n. sp.**
- Cyclophorus atomus*, Morel., note on ; ANCEY, J. Conchyl. lii, p. 309.
- Cyclostoma andrewse*, Ancey, is a *Colobostylus* ; ANCEY, t. c. p. 308 : *C. moniliatum*, n. var. ; ANCEY, t. c. p. 310.
- Cyclotus nudus*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 618 : **n. sp.**
- Diplommatina asopus*, Bav. and Dtz., note on ; ANCEY, J. Conchyl. lii, p. 315.
- Diplommatina tozana*, *tosanella*, *gibbera*, p. 620, *goniobasis*, *kiushuensis*, p. 621, *tokunoshimana*, *ventriosa*, p. 622, *kumejimana*, *lateralis*, *immersidens*, p. 623, *vespa*, p. 624, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
- Japonia toshimana*, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 104 : *J. tokunoshimana*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 616 : **n. spp.**
- Lagochilus obliquistriatus*, Java ; BULLEN, P. Malac. Soc. London vi, p. 110, fig. : **n. sp.**
- Leptopoma crenilabre*, Strubell, note on with fig. ; FULTON (243) : *L. leucorraphe*, Martens, n. var. ; SYKES, J. Malac. xi, p. 92.
- Leptopoma gebiensis*, Gebi I. ; FULTON, J. Malac. xi, p. 54, fig. : *L. ponsonbyi*, Obi ; SYKES, t. c. p. 91, fig. : **n. spp.**
- Mascaria bifasciata*, Sby., note on ; ANCEY, J. Conchyl. lii, p. 309.
- Nakadaella*, **n. gen.** for *Cyclotus* (?) *micron*, Pilsbry ; ANCEY, t. c. p. 315.
- Neocyclotus panamensis*, Panama ; DA COSTA, P. Malac. Soc. London vi, p. 6, fig. : **n. sp.**
- Omphalotropis varians*, Mlldff., is a synonym of *O. pæcila*, Ancey ; ANCEY, J. Conchyl. lii, p. 308.
- Opisthostoma*, notes on sectional names ; ANCEY, t. c. p. 315.
- Opisthostoma beddomei*, Borneo ; SMITH, P. Malac. Soc. London vi, p. 105, fig. : **n. sp.**
- Pupinida*, notes on ; COLLIER (125) : *P. miokoana*, Mlldf., is a synonym of *P. beddomei*, Ancey ; ANCEY, J. Conchyl. lii, p. 308.
- Pupinella oshime*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 618.
- Realia turriculata*, Pfr., n. subsp. ; SUTER, P. Malac. Soc. London vi, p. 157.

ACICULIDÆ and TRUNCATELLIDÆ.

- Coziella*, note on, *C. confusa*, Smith, is a synonym of *C. badgerensis*, Johnston ; HEDLEY (292).
- +*Pseudotruncatella*, **n. gen.**, type *Pupa microceras*, Braun ; ANDREAE, Mt. Mus. Hildesheim xx, p. 15.

HIPPONYCIDÆ, CAPULIDÆ, XENOPHORIDÆ, NARICIDÆ and
NATICIDÆ.

- Amalthea conica*, Schum., note on ; PILSBRY, P. Ac. Philad. 1904, p. 24.
 †*Antispira*, **n. gen.** for *A. præcox*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lii.
 †*Auriptygma*, **n. gen.** for *A. fortior*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lxi.
 †*Berliceria*, **n. gen.**, type *B. ledonica*, **n. sp.**, Ledonian Jura ; LORIOU (401), p. 131.
Capulus fragilis, Bay of Bengal ; SMITH, Ann. Nat. Hist. xiv, p. 1 : *C. devotus*, New South Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 190, fig. : **n. spp.**
Crepidula, origin of cleavage centrosomes ; CONKLIN (135).
Ergæa walshi, note on ; PILSBRY, P. Ac. Philad. 1904, p. 24.
 †*Fritschia*, **n. gen.** for *F. multicostata*, *paucicostata*, **n. spp.**, Trias, Germany ; PICARD, Jahrb. geol. Landesanst. Berlin xxii, p. 487.
 †*Læogyra*, **n. gen.** for *L. bohémica*, Perner, Silurian, Bohemia ; PERNER (477), Expln. pl. lii.
Natica millepunctata, *hebræa*, **n. varr.** ; PALLARY (468).
Natica napus, *decipiens*, Port Alfred ; SMITH, J. Malac. xi, p. 34, fig. : **n. spp.**
 †*Naticonema*, **n. gen.** for *N. similis*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. liv.
 †*Otospira*, **n. gen.** for *O. squamulata*, Perner, Silurian, Bohemia ; PERNER (477), Expln. pl. lvi.
 †*Palæonustus*, **n. gen.** for *P. comes*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.
Polinices sagamiensis, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 23, fig. : **n. sp.**
 †*Pseudotylostoma*, **n. gen.** for *P. romeroi*, **n. sp.**, Cretaceous, Argentina ; IHERING, An. Mus. Buenos Aires ii, p. 207.
 †*Ptychonema*, **n. gen.** for *P. nigra*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.
 †*Versispira*, **n. gen.** for *V. contraria*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.

PTENOGLOSSA.

SCALIDÆ.

- Acclis beltista*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 53, fig. : *A. thesauraria*, Gulf of Oman ; MELVILL, J. Malac. xi, p. 79, fig. : **n. spp.**
Berthais, **n. gen.** for *Scala intertexta*, M. and St., and *Onoba egregia*, A. Ad., figd. ; MELVILL, P. Malac. Soc. London vi, p. 61.
Scala fimbriolata, Melv., is a synonym of *S. kieneri*, Canefri ; SMITH (579).
Scala (Acrilla ?) cophinodes, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 53, fig. : **n. sp.**
Scalaria jolyi, Monts., figd. ; PALLARY (468).

GYMNOGLOSSA.

EULIMIDÆ and PYRAMIDELLIDÆ.

- Actæopyramis bulinea*, Lowe, **n. var** ; PALLARY, J. Conchyl. lii, p. 235.
Asmunda, **n. subgen.** of *Turbonilla*, type *Chemnitzia turrita*, C. B. Ad. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 9.

- Baldra*, **n. subgen.** of *Turbonilla*, type *T. archeri*, **n. sp.** ; DALL & BARTSCH, t. c. p. 9.
- Besla*, **n. subgen.** of *Odostomia*, type *Chrysallida convexa*, Cpтр. ; DALL & BARTSCH, t. c. p. 10.
- Callolongcheus*, **n. subgen.** of *Pyramidella*, type *Pyramidella jamaicensis*, Dall ; DALL & BARTSCH, t. c. p. 5.
- Cingulina brazieri*, Angas, is correctly placed and the name *Terebra hedleyi*, Tate, unnecessary ; SMITH (580).
- Cossmannica*, **n. subgen.** of *Pyramidella*, type *P. clandestina*, Desh. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Egila*, **n. subgen.** of *Odostomia*, type *Chrysallida lacunata*, Cpтр. ; DALL & BARTSCH, t. c. p. 11.
- Enterocenos*, **n. gen.** for *E. ostergreni*, **n. sp.**, Norway ; BONNEVIE, Zool. Jahrb. Anat. xv, p. 731, fig. : Spermiogenesis ; BONNEVIE (77).
- Eulima pavillus*, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 96, fig. : *E. (Subularia) hypolysina*, Gulf of Oman ; MELVILL, J. Malac. xi, p. 83, fig. : *E. præcurta*, Gulf of Gabes ; PALLARY, J. Conchyl. lii, p. 239, fig. : *E. distincta*, Port Alfred ; SMITH, J. Malac. xi, p. 35, fig. : **n. spp.**
- Eulinella nivea, minor*, Port Alfred ; SMITH, J. Malac. xi, p. 36, fig. : *E. ææa*, Persian Gulf ; MELVILL, t. c. p. 81, fig. : *E. gedrosica*, Persian Gulf, p. 55, *venusta*, Arabian Sea, p. 56 ; MELVILL, P. Malac. Soc. London vi, figg. : **n. spp.**
- Evalina*, **n. subgen.** of *Odostomia*, type *O. americana*, **n. sp.** ; DALL & BARTSCH, P. Soc. Washington xvii, p. 12.
- Folinella*, **n. subgen.** of *Odostomia*, type *Amoura anguliferens*, Folin ; DALL & BARTSCH, t. c. p. 10.
- Haldra*, **n. subgen.** of *Odostomia*, type *Chrysallida photis*, Cpтр. ; DALL & BARTSCH, t. c. p. 11.
- Heida*, **n. subgen.** of *Odostomia*, type *Syrnola caloosaensis*, Dall ; DALL & BARTSCH, t. c. p. 13.
- Iphiaua*, **n. subgen.** of *Pyramidella*, type *Syrnola densistriata*, Garrett ; DALL & BARTSCH, t. c. p. 6.
- Ividia*, **n. subgen.** of *Odostomia*, type *Parthenia armata*, Cpтр. ; DALL & BARTSCH, t. c. p. 11.
- Lancella*, **n. subgen.** of *Turbonilla*, type *T. (Lancea) elongata*, Pse. ; DALL & BARTSCH, t. c. p. 9.
- Leiostraca murchisoni*, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 97, fig. : **n. sp.**
- Lysacme*, **n. subgen.** of *Odostomia*, type *Chrysallida clausiliformis*, Cpтр. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 14.
- Milda*, **n. subgen.** of *Pyramidella*, type *Obeliscus ventricosus*, Quoy ; DALL & BARTSCH, t. c. p. 4.
- Mucronulia birtsi*, Ceylon ; PRESTON, J. Malac. xi, p. 77, fig. : *M. oxytenes*, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 163, fig. : **n. spp.**
- Mumiola carbacea*, Arabian Sea ; MELVILL, J. Malac. xi, p. 83, fig. : **n. sp.**
- Odostomia callipyrga*, **n. n.** for *Odetta elegans*, Folin ; DALL & BARTSCH, P. Soc. Washington xvii, p. 12.
- Odostomia (Vilia, n. subgen.) pilsbryi*, Singapore, p. 15, (*Evalina, n. subgen.*) *americana*, California, p. 16 ; DALL & BARTSCH, t. c. : *O. dorica*, Persian Gulf ; MELVILL, J. Malac. xi, p. 82, fig. : **n. spp.**
- Orinella*, **n. subgen.** of *Pyramidella*, type *Orina pingicula*, A. Ad. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Oscilla faceta, jocosa*, Gulf of Oman ; MELVILL, J. Malac. xi, p. 82, figg. : **n. spp.**
- Pyramidellidae*, review of genera and sections ; DALL & BARTSCH (172).
- Pyramidella (Sulcorinella, n. subgen.) dodona*, Florida ; DALL & BARTSCH, P. Soc. Washington xvii, p. 14 : **n. sp.**

- Saccoina*, **n. subgen.** of *Turbonilla*, type *Spica monterosatoi*, Sacco ; DALL & BARTSCH, t. c. p. 8.
- Stomega*, **n. sect.** of *Odostomia*, type *O. conspicua*, Alder ; DALL & BARTSCH, t. c. p. 13.
- Styloptygma lacteola*, Ceylon ; PRESTON, J. Malac. xi, p. 77, fig. : **n. sp.**
- Sulcorinella*, **n. subgen.** of *Pyramidella*, type *P. dodona*, **n. sp.** ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Syrnola ambagiosa*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 55, fig. : **n. sp.**
- Syrnolina*, **n. subgen.** of *Pyramidella*, type *Syrnola rubra*, Pse. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Tropeas*, **n. subgen.** of *Pyramidella*, type *P. subulata*, A. Ad. ; DALL & BARTSCH, t. c. p. 5.
- Turbonilla terebra, cingulata*, Dkr., notes on with figg. ; PILSBRY, P. Ac. Philad. 1904, p. 30.
- Turbonilla* (*Baldra*, **n. subgen.**) *archeri*, Singapore ; DALL & BARTSCH, P. Soc. Washington xvii, p. 15 : *T. gemmula, decora*, Port Alfred ; SMITH, J. Malac. xi, p. 36, figg. : *T. stricta*, p. 236, *mirifica*, p. 237, *tenuis*, p. 238, Gulf of Gabes ; PALLARY, J. Conchyl. lii, figg. : *T. angustissima*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 55, fig. : *T. inaequalis, microperone*, p. 162, *recticostata*, p. 163, Gulf of Oman ; MELVILL, t. c. figg. : *T. hiradoensis*, p. 29, (*Cingulina*) *triarata*, p. 31, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**
- Ulfa*, **n. subgen.** of *Pyramidella*, type *P. cossmanni* (**n. n.** for *Syrnola striata*, COSSM.) ; DALL & BARTSCH, P. Soc. Washington xvii, p. 5.
- Vagna*, **n. subgen.** of *Pyramidella*, type *P. paumotensis*, Tryon ; DALL & BARTSCH, t. c. p. 5.
- Vilia*, **n. subgen.** of *Odostomia*, type *O. pilsbryi*, **n. sp.** ; DALL & BARTSCH, t. c. p. 10.
- Visma*, **n. subgen.** of *Turbonilla*, type *Eulimella tenuis*, Sby. ; DALL & BARTSCH, t. c. p. 8.
- Voluspa*, **n. subgen.** of *Pyramidella*, type *Pyramidella auricoma*, Dall ; DALL & BARTSCH, t. c. p. 4.

SCUTIBRANCHIATA.

RHIPHIDOGLOSSA.

HELICINIDÆ.

- Helicina verecunda*, **n. subsp.** ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 625 : *H. pterophora*, Sykes, is a synonym of *H. oxyrhynca* ; ANCEY, Nautilus xviii, p. 22 : *H. euglypta*, Crosse, is a synonym of *H. plicatula*, Pfr. ; ANCEY, t. c. p. 309.
- Helicina subsuturalis*, Marshall Is. ; BOETTGER, Zool. Jahrb. Syst. xx, p. 411 : *H. baldwini*, Kauai, p. 126, *dissotropis*, Oahu, *sulculosa*, Hawaii, p. 127 ; ANCEY, P. Malac. Soc. vi, figg. : **n. spp.**

NERITIDÆ, MACLURITIDÆ, TURBINIDÆ, TROCHIDÆ, and CYCLOSTREMATIDÆ.

- Basilissa* (*Ancistrobasis*) *compsa*, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 160, fig. : **n. sp.**
- Chlorostoma rugatum*, Gld., **n. subsp.** ; PILSBRY, P. Ac. Philad. 1904, p. 33.
- +*Cirropsis*, **n. gen.** for *C. præpostera*, Barr., Silurian, Bohemia, PERNER (477), Explan. pl. lix.
- Clanculopsis jussieu*, **n. subsp.** ; PALLARY, J. Conchyl. lii, p. 240.

- Clanculus hizenensis*, n. var., with fig. of *C. gemmulifer* v. *pallidus*; PILSBRY, P. Ac. Philad. 1904, p. 33.
- Collonia rosa*, Japan; PILSBRY, t. c. p. 31, fig.: **n. sp.**
- +*Cosmina*, **n. gen.** for *C. complacens*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lxxv.
- Cyclostrema gyalum*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 54, fig.: *C. eumares*, p. 158, *eupoietum*, p. 159, Gulf of Oman; MELVILL, t. c. figg.: **n. spp.**
- +*Cyclotropis*, **n. gen.** for *C. indocilis*, Barr., &c., Silurian, Bohemia; PERNER (477), Expln. pls. lxi, lxxvii.
- Cynisca fortisulcata*, Port Alfred; SMITH, J. Malac. xi, p. 38, fig.: **n. sp.**
- Ethalia carneolata*, Melv., n. var.; MELVILL, t. c. p. 80, fig.
- Ethalia jucunda*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 159, fig.: *E. africana*, Port Alfred; SMITH, J. Malac. xi, p. 38, fig.: **n. spp.**
- Euchelus cancellatus*, n. subsp.; PILSBRY, P. Ac. Philad. 1904, p. 35: *E. erythraensis*, Sturany, is a synonym of *Clanculus gennesi*; FISCHER, J. Conchyl. lii, p. 59.
- Euchelus lischkei*, p. 34, *hachijoensis*, p. 35, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: **n. spp.**
- Gibbula incarnata*, vittata, Pils., figd.; PILSBRY, t. c. p. 34.
- +*Horiosomella*, **n. gen.** for *H. otiosa*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lxxiii.
- Leiopyrga* belongs to *Trochidae*, with note on *L. octona*, Tate; VERCO (630).
- Liotia polypleura*, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 93, fig.: **n. sp.**
- +*Meandrella*, **n. gen.** for *M. sculpta*, Perner, Silurian, Bohemia; PERNER (477), Expln. pl. lxxxiv.
- +*Michaletia*, **n. gen.** for *M. semigranulata*, **n. sp.**, Cretaceous, France; COSSMANN, C.R. Ass. Franc. 1903, pt. ii, p. 634.
- Monilea nucleolus*, Pils., figd.; PILSBRY, P. Ac. Philad. 1904, p. 34.
- +*Nematrochus*, **n. gen.** for *N. concurrens*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lxii.
- Neritina virginea*, variation; METCALF (445).
- Omphalium collingei*, Persian Gulf; MELVILL, J. Malac. xi, p. 80, fig.: **n. sp.**
- +*Pagodea*, **n. gen.** for *P. concomitans*, Barr.; PERNER (477), Expln. pl. lxiv.
- Phasianella tristis*, Pils., figd.; PILSBRY, P. Ac. Philad. 1904, p. 32.
- +*Planitrochus*, **n. gen.** for *P. amicus*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lxiv.
- +*Ploconema*, **n. gen.** for *P. protendens*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lix.
- +*Pseudotectus*, **n. gen.** for *P. carinatus*, Perner, &c., Silurian, Bohemia; PERNER (477), Expln. pls. lxiv, lxv.
- +*Pycnotrochus*, **n. gen.** for *P. viator*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lxv.
- +*Rotellomphalus*, **n. gen.** for *R. tardus*, Barr. MS., Silurian, Bohemia; PERNER (477), Expln. pl. xlii.
- +*Sellinema*, **n. gen.** for *S. dives*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lxiii.
- +*Tectospira*, **n. gen.** for *T. chopi*, **n. sp.**, Trias, Germany; PICARD, Jahrb. geol. Landesanst. Berlin xxii, p. 479.
- +*Temnospira*, **n. subgen.** of *Brochidium*, for *B. percinctum*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lxxix.
- +*Tortulla*, **n. gen.** for *T. disjuncta*, Barr., Silurian, Bohemia; PERNER (477), Expln. pl. lix.

Trochus, anatomy of British species ; RANGLES (509).

Trochus hirasei, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 32, fig. : **n. sp.**

+*Tubogyra*, **n. gen.** for *T. primula*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pls. lxxxiv, lxxxvi.

+*Tubomphalus*, **n. gen.** for *T. crenistria*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. xlii.

+*Umbospira*, **n. gen.** for *U. nigricans*, Barr. MS., Silurian, Bohemia ; PERNER (477), Expln. pl. xlii.

+*Umbotrochus*, **n. gen.** for *U. aspersus*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lxvi.

+*Umbotropis*, **n. gen.** for *U. albicans*, Barr. MS., Silurian, Bohemia ; PERNER (477), Expln. pl. xlii.

HALLOTIDÆ, BELLEROPHONTIDÆ, and FISSURELLIDÆ.

Some new Silurian genera in the last section may belong here.

+*Donaldia*, **n. gen.** for *D. altera*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.

Haliotis tuberculata, anatomy and phylogeny ; FLEURE (226) : *Haliotis* without perforations ; KELSEY (346) : *H. tuberculata*, imperforate ; MARQUAND, J. Conch. xi, p. 48, also Rep. Guernsey Soc. 1903, p. 233.

Incisura, **n. gen.** for *Scissurella lyttletonensis* (sic), Smith ; HEDLEY, Rec. Austral. Mus. v, p. 91.

+*Lessuerella* (Koken MS.), **n. gen.** for *L. bohémica*, Perner, Silurian, Bohemia ; PERNER (477), Expln. pl. lxxiii.

+*Plectonotus*, **n. gen.** for *P. derbyi*, **n. sp.**, Devonian, Brazil ; CLARKE, Arch. Mus. Rio Janeiro x, p. 70.

+*Ptomatis*, **n. gen.** for group of *Bellerophon patulus*, Hall ; CLARKE, t. c. p. 75.

Puncturella demissa, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 93, fig. : **n. sp.**

Schismope brevis, New Zealand ; HEDLEY, t. c. p. 90, fig. : **n. sp.**

Scissurella jacksoni, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 160, fig. : *S. rosca*, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 90, fig. : **n. spp.**

DOCOGLOSSA.

ACMÆIDÆ, and PATELLIDÆ.

Docoglossa, evolution in ; FLEURE (228).

Acmea octoradiata, Hutton, *alticostata*, Angas, notes on ; HEDLEY (292).

Acmea minutissima, off the Andamans ; SMITH, Ann. Nat. Hist. xiv, p. 4 : **n. sp.**

Lottia gigantea, Gray, anatomy ; FISHER (225).

Nacella crebristriata, South Australia ; VERCO, Tr. R. Soc. S. Austral. xxviii, p. 144, fig. : **n. sp.**

Patella, development ; WILSON (653).

III. SCAPHOPODA.

Cadulus acuminatus, Tate, notes on ; VERCO (630).

+*Clavulites*, **n. gen.**, type *C. howardensis*, **n. sp.**, Carboniferous, Kansas : GIRT, P. U. S. Mus. xxvii, p. 732.

Dentalium, development ; WILSON (653) : Anatomy and histology ;

BOISSEVAIN (73): *D. intercalatum*, of which *D. bednalli*, Sharp and Pils., is a synonym, notes on; VERCO (630).
Dentalium vallicolens, California; RAYMOND, *Nautilus* xvii, p. 123:
 n. sp.

IV. PELECYPODA.

Assumption of rounded form in attached bivalves; ANTHONY (21).
 Adductor muscles in Pelecypods; ANTHONY (19).
 Pelecypoda, morphology; VLÈS (634).

SEPTIBRANCHIATA.

Cuspidaria optima, p. 17, *nasuta*, (*Cardiomya*) *gilchristi*, (*C.*) *forticostata*, p. 18, South Africa; SOWERBY (589), figg.: n. spp.
Poromya gilchristi, p. 15, *striata*, *granosissima*, p. 16, *curta*, p. 17, South Africa; SOWERBY (589), figg.: n. spp.

EULAMELLIBRANCHIATA.

Synapticola, n. gen. for *S. perrieri*, n. sp., parasite of *Synapta*, France; MALARD, *Bull. Mus. Paris* ix, p. 344.

ANATINACEA.

Anatina andamanica, off the Andamans; SMITH, *Ann. Nat. Hist.* xiv, p. 8: n. sp.
Halistrepta, n. sect. of *Periploma* for *P. sulcata*, n. sp.; DALL, *Nautilus* xvii, p. 123.
Myodora reeveana, Smith, figd. with note; PILSBRY, *P. Ac. Philad.* 1904, p. 558.
Periploma sulcata, California; DALL, *Nautilus* xvii, p. 122: n. sp.
 †*Pleurophorella*, n. gen., type *P. papillosa*, n. sp., Carboniferous, Texas; GIRTY, *P. U. S. Mus.* xxvii, p. 728.
Thraciopsis arenosa, New South Wales; HEDLEY, *P. Linn. Soc. N. S. Wales* xxix, p. 197, fig.: n. sp.

PHOLADACEA.

Gastrochana mowbrayi, Bermuda; DAVIS, *Nautilus* xvii, p. 128, fig.: n. sp.
 †*Girardotia*, n. gen., type *G. elegans*, n. sp., Ledonian Jura; LORIOI (401), p. 133.
Xylophaga indica, off the Andamans; SMITH, *Ann. Nat. Hist.* xiv, p. 7: n. sp.

MYACEA and CARDIACEA.

Cardium, sensory organs in the tentacles; ZUGMAYER (670): *C. hungerfordi*, Sby., n. subsp.; PILSBRY, *P. Ac. Philad.* 1904, pp. 555 & 556: *C. becheri*, Rve., note on; HEDLEY (292).
Cardium annæ, Japan; PILSBRY, *P. Ac. Philad.* 1904, p. 557, fig.: *C. gilchristi*, South Africa; SOWERBY (589), p. 11, fig.: n. spp.
 †*Ceroniola*, n. gen., type *Cultellus australis*, Gabb, Tertiary, Chili; WILCKENS, *N. Jahrb. Min. B.B.* xviii, p. 249.

- Cultellus decipiens*, Port Alfred ; SMITH, J. Malac. xi, p. 39 : **n. sp.**
Panopea bitruncata, Conrad, notes on species and synonymy ; JOHNSON (339).
Tridacna, morphology and anatomy ; ANTHONY (20).

VENERACEA and TELLINACEA.

- Chione nitida*, Q. and G., notes on synonymy ; HEDLEY (292).
Chione despecta, New South Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 193, fig. : *C. micra*, p. 552, *kizenensis*, p. 553, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**
Codakia bella, **n. subsp.** ; PILSBRY, t. c. p. 555.
Cytherea crispata, **n. subsp.** ; PILSBRY, t. c. p. 551.
Gomphina moerchii occurs at New Hebrides ; HEDLEY (294).
Mactra, artificial development of ova ; KOSTANECKI (372) : Artificial parthenogenesis in the egg ; KOSTANECKI (373).
Mactra carneopicta, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 550, fig. : *M. delicatula*, *taprobanensis*, Ceylon ; PRESTON, J. Malac. xi, p. 78, figg. : **n. spp.**
Pitar sulfurea, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 553, fig. : **n. sp.**
Psammobia arakanensis, Arakan Coast ; SMITH, Ann. Nat. Hist. xiv, p. 10 : **n. sp.**
Semele capensis, Port Alfred ; SMITH, J. Malac. xi, p. 39, fig. : **n. sp.**
Spisula (Oxyperas) bernardi, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 550, fig. : **n. sp.**
Tellina laevigata, **n. var.** ; DAVIS (181).
Tellina hirasei, p. 554, *fabrefacta*, p. 555, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : *T. kenyoniana*, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xvii, p. 339, fig. : *T. regularis*, Port Alfred ; SMITH, J. Malac. xi, p. 39, fig. : *T. gilchristi*, *analogica*, p. 12, *viduensis*, (*Macoma*) *levior*, p. 13, (*M.*) *ordinaria*, (*M.*) *africana*, (*M.*) *inclinata*, p. 14, South Africa ; SOWERBY (589), figg. : **n. spp.**
Theora ovalis, Port Alfred ; SMITH, J. Malac. xi, p. 39, fig. : **n. sp.**
Venus mercenaria, nervous regulation of heart ; BUDINGTON (91) : *V. arakana*, Nevill, note on ; PILSBRY, Nautilus xviii, p. 23.
Venus (Anatis) interseulpta, South Africa ; SOWERBY (589), p. 11, fig. : **n. sp.**

SUBMYTILACEA.

- Anodonta bouvieri* (Locard), Charente ; ROCHEBRUNE, Bull. Mus. Paris ix, p. 391 : *A. chivoti*, France ; GERMAIN, Bull. Soc. Ouest France xiv, p. 87 : **n. spp.**
Astarte crenata, **n. varr.** ; HÄGG, Arkiv Zool. ii, p. 37, figg.
Bartlettia, notes on species and young shell ; ROCHEBRUNE (530).
Cardita pulcherrima, South Africa ; SOWERBY (589), p. 7, fig. : *C. umbonata*, Sierra Leone ; SOWERBY, P. Malac. Soc. London vi, p. 177, fig. : *C. (?) minima*, Port Alfred ; SMITH, J. Malac. xi, p. 41, fig. : **n. spp.**
Carditella laticosta, Port Alfred ; SMITH, J. Malac. xi, p. 41, fig. : **n. sp.**
Crassatella gilchristi, p. 8, *angulata*, *africana*, p. 9, *abrupta*, *tenuis*, p. 10, South Africa ; SOWERBY (589), figg. : **n. spp.**
†*Choniocardia*, **n. subgen.** of *Venericardia*, type *V. oppenheimi*, **n. sp.**, Tertiary, France ; COSSMANN, Bull. Soc. Ouest France xiv, p. 209.
Corbicula doufilei, White Nile ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 144 : *C. subrostrata*, Java, p. 109, *fabu*, New South Wales, p. 110 ; BULLEN, P. Malac. Soc. London vi, figg. : **n. spp.**
Crassatellites ponderosus, Gmelin, note on synonymy ; HEDLEY (292).

Diplodonta tasmanica, Woods, is a synonym of *D. zelandica*, Gray; HEDLEY (292).

Dreissensia polymorpha, habits, &c.; STANDEN (592).

Grandidieria, notes on; ROCHEBRUNE (533).

Harmandia, notes on; ROCHEBRUNE (531).

Harmandia castelneauvi, Cochinchina; ROCHEBRUNE, Bull. Mus. Paris x, p. 140: **n. sp.**

Hyriopsis goliah, Tonkin; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, p. 25, fig.: **n. sp.**

Isocardia cor, L., n. var.; PALLARY (468).

Kellia porculus, Japan; PILSBRY, P. Ac. Philad. 1904, p. 558, fig.: **n. sp.**

Lepton fortidentatus, Port Alfred; SMITH, J. Malac. xi, p. 41, fig.: **n. sp.**

Lucina despecta, valida, Port Alfred; SMITH, t. c. p. 40, figg.: **n. spp.**

Megacrinus unguiculatus (Monts. MS.), Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 247, fig.: **n. sp.**

†*Miocardiella*, **n. subgen.** (? of *Isocardia*), type *M. taurinensis*, **n. sp.**, Tertiary; SACCO (546), p. 161.

Nodularia, notes on, of which *Pharaonia*, *Zairia*, *Reneus*, and *Parreysia* are synonyms; ROCHEBRUNE (533).

Parreysia, Contr., is a synonym of *Nodularia*; ROCHEBRUNE (533).

Pharaonia, Brgt., is a synonym of *Nodularia*; ROCHEBRUNE (533).

Pisidium supinoide, p. 81, *ovale, futtereri, kukuurensis, obliquatum, lateumbonatum*, p. 82, Central Asia; CLESSIN (120): **n. spp.**

Quadrula, notes on embryology; FRIERSON (234).

Reneus, Jouss., is a synonym of *Nodularia*; ROCHEBRUNE (533).

Solecardia vitrea, Q. & G., n. subsp.; PILSBRY, P. Ac. Philad. 1904, p. 558.

Spathella bozasi, brumpti, near Lake Rudolph; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 144: **n. spp.**

Tellinys similis, Port Alfred; SMITH, J. Malac. xi, p. 41, fig.: **n. sp.**

Unionide, notes on French species, with n. varr.; GERMAIN (249): Structure of the shell; FRIERSON (233): *U. postumus*, **n. n.** for *U. duponti*, Brgt.; ROCHEBRUNE, Bull. Mus. Paris x, p. 258: *U. ater*, Nilss., n. var.; LINDHOLM, Annuaire Mus. St. Petersb. viii, p. 343: *U. tumidus, pictorum*, notes on; DUDINSZKY (206).

Unio subniger, France; GERMAIN, Bull. Soc. Ouest France xiv, p. 31: *U. yliscerus* (Locard), Charente; ROCHEBRUNE, Bull. Mus. Paris ix, p. 390: *U. (Quadrula) liedtkei*, p. 25, (*Nodularia*) *gracillimus*, p. 26, Tonkin; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, figg.: **n. spp.**

Verticipronus, **n. gen.** for *V. mytilus*, **n. sp.**, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 88, fig.

Vesicomya indica, Travancore and off the Andamans; SMITH, Ann. Nat. Hist. xiv, p. 9: **n. sp.**

Zairia, Rochbr., is a synonym of *Nodularia*; ROCHEBRUNE (533).

PSEUDOLAMELLIBRANCHIATA.

†*Acanthopecten*, **n. subgen.** of *Aviculopecten*, for *A. carboniferus*, Stevens, Carboniferous, N. America; GIRTY (256), p. 417.

Amussium sibogai, Celebes; DAUTZENBERG & BAVAY, J. Conchyl. lii, p. 207, fig.: **n. sp.**

Aviculopecten, notes on genus and type; GIRTY (257): HIND, Amer. Geol. xxxiv, p. 200: GIRTY, t. c. p. 332.

Chlamys gloriosa, Rve., note on, *hyalina*, Poli, n. var.; PALLARY (468).

Chlamys hirasei, Japan, p. 197, *ambiguus*, China Sea, p. 198, *wilhelminae*, New Caledonia, p. 200, *weberi*, West Africa, p. 202, *jousseaumei*, Japan, p. 203, *cythereus*, Pacific Ocean, p. 204; BAVAY, J. Conchyl.

- lii, figg. : *U. gilchristi*, p. 1, *fultoni*, p. 2, *humilis*, p. 3, South Africa; SOWERBY (589), figg. : **n. spp.**
- +*Cochlearites*, **n. gen.** for *Lithiotis problematica*, of some authors; REIS (518), p. 2.
- +*Cultrioropsis*, **n. sect.** of *Gervilleia*, type *G. falciformis*, **n. sp.**, Lias, France; COSSMANN, Bull. Soc. geol. France iii, p. 510.
- Cyclopecten nepeunensis*, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria xvii, p. 338, fig. : **n. sp.**
- Dacrydium fabale*, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 199, fig. : **n. sp.**
- Lima sydneyensis*, **n. n.** for *L. brunnea*, Hedley non Cooke, with fig. of *L. bassii*, Woods; HEDLEY (292).
- Lima perfecta*, Port Alfred; SMITH, J. Malac. xi, p. 43, fig. : **n. sp.**
- +*Limipecten*, **n. gen.**, type *L. texanus*, **n. sp.**, Carboniferous, Texas; GIRTY, P. U. S. Mus. xxvii, p. 721.
- +*Mantellina*, **n. subgen.** (? of *Lima*), type *M. inoceramoides*, **n. sp.**, Tertiary; SACCO (546), p. 148.
- Margaritifera vulgaris*, anatomy; HERDMAN (301): Parasites; SHIPLEY & HORNELL (558): *M. margaritifera*, L., notes on; SEURAT (554, &c.): *M. albina*, Lam., is correct name for Mediterranean pearl oyster; GIARD (252).
- +*Nothamusium*, **n. gen.** for *N. radiatum*, *transversum*, **n. spp.**, Carboniferous, Brit. Is.; HIND (306), p. 159.
- Ostrea*, distorted form; WINKLEY, Nautilus xviii, p. 24: Pigmentation; SCHIEDT (549).
- Ostrea circumpicta*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 559, fig. : **n. sp.**
- +*Parvochlamys*, **n. subgen.** (? of *Pecten*) for *P. oolevis*, **n. sp.**, Tertiary; SACCO (546), p. 145.
- Pecten*, retinal nerve-endings in eye; HYDE (319): Variation in some American species; DAVENPORT (179): Nervous system; DREW (199): *P. vescoi*, Bavay, is a var. of *P. opercularis*; BAVAY, J. Conchyl. lii, p. 206: *P. tenuicostatus*, anatomy and embryology; DREW (200): *P. varius*, rib variation; DAVENPORT & HUBBARD (180): *P. irradians*, nerve distribution in the eye; HYDE (318).
- Pecten (Chlamys) farreri*, Shantung; JONES & PRESTON, P. Malac. Soc. London vi, p. 149, fig. : *P. frigidus*, Polar Sea; JENSEN, Vid. Medd. 1904, p. 305, fig. : *P. alcocki*, off South India; SMITH, Ann. Nat. Hist. xiv, p. 13 : **n. spp.**
- Philippiella rubra*, Tasmania; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 207, fig. : **n. sp.**
- Philobrya inornata*, New South Wales; HEDLEY, t. c. p. 207, fig. : **n. sp.**

FILIBRANCHIATA.

Anomia, structure of muscles; MARCEAU (416).

Arca, critical notes on Lamarck's species and their synonymy; LAMY (381): *A. pistachia*, Lam., of which *A. radula*, Smith, is a synonym, and *A. lischkei*, Dkr., notes on; HEDLEY (292): *A. pharaonis*, Fischer, is a synonym of *A. ehrenbergi*, Dunker; LAMY, J. Conchyl. li, p. 323: *A. rhombea*, **n. var.**; LAMY, Bull. Mus. Paris ix, p. 393.

Arca (Scapharca) africana, South Africa; SOWERBY (589), p. 4, fig. : *A. kobeltiana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 559, fig. : **n. spp.**

Crenella striatissima, South Africa; SOWERBY (589), p. 3, fig. : **n. sp.**

Glycymeris stands for *Pectunculus*; JUKES-BROWNE, J. Conch. xi, p. 101: Notes on name; DAUTZENBERG & DOLLFUS (177).

Hochstetteria velaini, *limoides*, Port Alfred; SMITH, J. Malac. xi, p. 42, figg. : **n. spp.**

Limopsis pumilio, Port Alfred; SMITH, t. c. p. 43, fig.: **n. sp.**

Modiola tenerrima, Port Alfred; SMITH, t. c. p. 42, fig.: *M. sambasensis*, Borneo; DAUTZENBERG, Ann. Soc. malac. Belgique xxxviii, p. 7, fig.: **n. spp.**

Myrina minima, Smith, is a synonym of *Hochstetteria trapezina*, Bernard; HEDLEY, Rec. Austral. Mus. v, p. 89.

Myrina indica, off the Andamans; SMITH, Ann. Nat. Hist. xiv, p. 11: **n. sp.**

Mytilus, development of gill; RICE (525).

Mytilus orbicularis, Mediterranean; PALLARY, Ann. Mus. Marseille viii, No. 1, p. 14, fig.: **n. sp.**

Pectunculus, notes on name; DAUTZENBERG & DOLLFUS (177).

Pleurodon maorianus, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 87, fig.: **n. sp.**

†*Pseudocucullæa*, **n. gen.**, type *P. lens*, **n. sp.**, Cretaceous, Kameruns; SOLGER, Zeitschr. Deutsch. geol. Ges. lv, Protok. p. 76: Is identical with *Lopatinia*, Schmidt; SCHMIDT, Zeitschr. Deutsch. geol. Ges. lvi, Protok. p. 120.

Savignyarca, Jouss., is unnecessary, and type, *S. savignyarca*, is a form of *Arca obliquata*, Gray; LAMY (382).

†*Tachomya*, **n. subgen.** [of ?], for *T. rathbuni*, **n. sp.**, Devonian, Brazil, &c.; CLARKE, Arch. Mus. Rio Janeiro x, p. 96.

Volsella, Scopoli, should be dropped; JUKES-BROWNE (344).

PROTOBRANCHIATA.

Nucula nucleus, locomotion; VLÈS (635): *N. nucleus*, nervous system; BURNE (93): *N. hedleyi*, **n. n.** for *N. minuta*, Woods non Gould; PRITCHARD & GATLIFF, P. Soc. Victoria xvii, p. 237.

Nucula irregularis, sculpturata, South Africa; SOWERBY (589), p. 7, figg.: **n. spp.**

Nuculana does not replace *Leda*; JUKES-BROWNE, J. Conch. xi, p. 100: *N. belcheri*, Hinds, note with fig.; SOWERBY (589), p. 4.

Nuculana lamellata, p. 5, *gemmulata, compta*, p. 6, South Africa; SOWERBY (589), figg.: **n. spp.**

Portlandia kolthoffi, Jan Mayen; HÄGG, Arkiv Zool. ii, p. 12, fig.: **n. sp.**

Yoldia keppeliana, Hab. incert.; SOWERBY, P. Malac. Soc. London vi, p. 176, fig.: **n. sp.**

V. AMPHINEURA.

APLACOPHORA.

Solenogastres, habits of; HEATH (286).

Limifossor, **n. gen.**, type *L. talpoideus*, **n. sp.**, Alaska; HEATH, Zool. Anz. xxviii, p. 329.

Proneomenia, sp., Hawaiian Is., with anatomy; HEATH (288).

Rhopalomenia, sp., Hawaiian Is., with anatomy; HEATH (288).

POLYPLACOPHORA.

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VIII. BRACHIOPODA.

BY

E. R. SYKES, B.A.

ASSISTED BY

E. A. SMITH, I.S.O.

CONTENTS.

	Page
I. TITLES	1
II. BIOLOGY.	
Anatomy	4
Distribution.	
Geographical	5
Geological	5
III. SYSTEMATIC	7

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III. SYSTEMATIC.

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Crania anomala, abnormal sculpture ; SCHEPOTIEFF (49).

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Terebratulina radula, N. S. Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 209, fig. : n. sp.

IX. BRYOZOA.

BY

ALICE L. EMBLETON, B.Sc., F.L.S.

CONTENTS.

	Page
I. TITLES	2
II. SUBJECT INDEX	
(a) General Biology . . .	8
(b) Geographical . . .	9
III. SYSTEMATIC INDEX	
1. Entoprocta	11
2. Ectoprocta	
Gymnolæma	
Cyclostoma . . .	11
Cheilostoma . . .	13
Ctenostoma . . .	16
Phylactolæma . . .	17

INTRODUCTION.

Bryozoa literature this year is distinguished by a monograph by CALVET (11) in which he gives descriptions of many species; in another paper (10) he gives diagnoses of numerous sub-antarctic forms from the Atlantic, several of which are new to science. MICHAELSEN (82) discusses the affinities of *Bryozoa*, and NEVIANI (84) continues his bibliography of living and fossil forms. He has also written on a collection from the Mediterranean. WATERS (116) reports on the species from Franz-Josef Land collected in 1896 & 1897 by the Jackson Harmsworth Expedition, DAVENPORT (22) on the fresh-water forms of the United States, and GARRARD (40) writes on English fresh-water representatives.

STIASNY (106) has worked on the excretory apparatus of the *Entoprocta*.

Fossil *Bryozoa* have this year been the subject of five papers by CANU. In one (13) he deals with Egyptian forms; another he devotes to describing *Pustulopora semiclausa* (14); in a third and important memoir he writes

on Tertiary *Bryozoa* from the region South of Tunis (15); his fourth work is also on Tertiary representatives, but in this case from Patagonia, with many new species (16). His last paper is a small contribution on general points in the study of fossil *Bryozoa*.

MAPLESTONE (76, 77) again adds much valuable information to the subject of fossil forms. This year he has published a tabulated list of fossil Cheilostomatous Polyzoa from the Victorian Tertiary deposits. He also describes a collection from Lord Howe Island. ULRICH & BASSLER (108) have made a revision of Paleozoic *Bryozoa* of the genera and species of *Ctenostomata* and of *Trepustomata*, of which many are new. In another paper these authors deal with Miocene forms (109).

JUKES-BROWNE (55) gives lists of species found in the upper chalk of England, and CUMINGS (21) writes on the development of some Paleozoic *Bryozoa*.

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II. SUBJECT INDEX.

(a) GENERAL BIOLOGY.

BRYOZOA collectively or of more than one division.

Text book of zoology, CLAUS & GROBBEN (19).

Classification, NEVIANI (84).

Affinities of *Bryozoa* discussed, MICHAELSEN (82).

Affinities of *Bryozoa*, MEYER (81), LONGCHAMPS (70).

Affinities with *Phoronis*, SCHULTZ (103).

Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (42).

Constitution of chromatin in the nucleus, BOVERI (9).

Bryozoa as food fishes, [ANON] (2).

Rock-cementing organisms, LOMAS (69).

Plancton collections by the "Selianik," OSTROUMOFF (90).

Faunal studies, WOLTERSTORFF (121).

+Paleozoic Bryozoan reefs, GRABAU (44).

ENTOPROCTA.

Excretory organs, STIASNY (106).

CYCLOSTOMA.

+Jurassic forms of *Stomatopora* and *Proboscina*, LANG (63).

Budding in *Lichenopora*, MARCHAL (78).

+Development of some paleozoic forms, CUMINGS (21).

CHEILOSTOMA.

Anatomy of new forms from the subantarctic region of the Atlantic, CALVET (10).

+Anatomy of some fossil forms, COUFFON (20).

Anatomy of *Membranipora membranacea*, LOPPENS (71).

Rock-cementing forms, LOMAS (69).

On the constitution of the chromatic substance in the nucleus, BOVERI (9).

+Collections of species from Lower Coal Measures, Kansas, BEEDE & ROGERS (5).

Affinities, MICHAELSEN (82).

CTENOSTOMA.

Anatomy of some fresh-water species, DAVENPORT (22).

Anatomy of numerous species, WATERS (116).

+Anatomy of Paleozoic forms, ULRICH & BASSLER (107).

Male reproductive organs, RETZIUS (96).

PHYLACTOLÆMA.

Anatomy of fresh-water forms, DAVENPORT (22).

Anatomy of *Cristatella*, HURRELL (54).

Anatomy and biology of *Lophopus crystallinus*, GARRARD (40).

Budding in *Lophopus* and *Cristatella*, MARCHAL (78).

United States, fresh-water forms, DAVENPORT (22).

(b) GEOGRAPHICAL.

GENERAL.

Bryozoa, distribution and the bipolarity theory, CALVET (12).

Finland, plankton collections, LUTHER (73).

+Surrey, collections, HOLMES (51).

- Upper Rhine, collections, LAUTERBORN (64).
Roumania, CHIRICA, Ann. Univ. Jassy iii, pp. 4-14.
Portugal, north, and south marine fauna, NOBRE (88, 89).
Mediterranean, collections, NEVIANI (86).
†Crete, collections, BONARELLI (8).
†India, lists of spp. collected, HAYDEN (47).
South California, collections, KOFORD (61).
Bermudas, n. spp., VERRILL (113, 114, 115).

ENTOPROCTA.

- Antarctic regions, collections, WATERS (117).
Sub-Antarctic regions, Atlantic Ocean, CALVET (10), n. spp.
Belgium, Collections, GILSON (41).
United States, fresh-water forms, DAVENPORT (22).
Bermudas, n. sp., VERRILL (113, 114, 115).

ECTOPROCTA.

CYCLOSTOMA.

- Antarctic regions, n. spp., WATERS (117).
†England, Upper Chalk, Cretaceous forms, JUKES-BROWNE (55).
†Belfast, collections, LAMPLUGH etc. (62).
†Denmark, collections, USSING (110).
†Tunis, Tertiary forms, CANU (15).
†Egypt, fossil spp. described, CANU (13).
Franz-Josef Land, collections, WATERS (116).
†New York, Trenton conglomerate, fauna, RUEDEMANN (101).
†Maryland, Miocene, n. spp., ULRICH & BASSLER (109).
†Colorado, Carboniferous collections, Girty (43).
†American Paleozoic forms, including new genera and species, ULRICH & BASSLER (107).
†Patagonia, tertiaries, n. spp., CANU (16).
Lord Howe Island, n. spp., MAPLESTONE (77).

CHEILOSTOMA.

- Antarctic regions, n. spp., WATERS (117).
Sub-Antarctic regions, Atlantic Ocean, n. spp., CALVET (10).
North Sea, n. spp., LOHMANN (68).
†Tomsk, collections, POLÉNOFF (92).
†England, upper chalk, Cretaceous forms, JUKES-BROWNE (55).
Belgium, collections, LOPPENS (72).
†Bohemia, Miocene forms, PROCHÁZKA (93).
†Sarajevo, collections, KITTL (59).
†Tunis, Tertiary forms, CANU (13).
†Egypt, fossil spp. described, CANU (13).
†Tennessee and Kentucky, forms from the Silurian and Devonian Limestones, FOERSTE (37).
†Southern Indiana, collections, FOERSTE (38).
†Maryland, Miocene, ULRICH & BASSLER (109).
†Patagonia, tertiaries, n. spp., CANU (16).
Lord Howe Island, n. spp., MAPLESTONE (77).
†Victorian Tertiaries, remarks on deposits, MAPLESTONE (76).

CTENOSTOMA.

†American Paleozoic forms, including many new species, ULRICH & BASSLER (107).

United States, freshwater forms, DAVENPORT (22).

Franz-Josef Land, collections, WATERS (116).

III. SYSTEMATIC INDEX.

1. ENTOPROCTA.

- Barentsia variabilis*, p. 40, pl. iii, fig. 1, *B. capitata*, p. 41, fig. 2, CALVET, Ergebn. Hamburg. Magalhaen. Reise 1904; *B. discreta*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 99, pl. vii, fig. 6, pl. viii, fig. 17. *B. timida*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 594, pl. lxx, fig. 4, **n. sp.**; *B. variabilis*, *B. capitata*, sub-antarctic region, Atlantic Ocean, CALVET, Bull. Soc. zool. France xxix, 3, pp. 58 & 59 : **n. spp.**
- Loxosoma crassicauda*, excretory organs, STIASNY, Arb. Inst. Wien xv, 2, pp. 183–197, 1 pl.
- Pedicellina echinata*, excretory organs, STIASNY, t. c. pp. 183–197, 1 pl.; *P. belgica*, Belgium, GILSON, Mem. Mus. Belgique i, p. 34.
- Urnatella gracilis*, Philadelphia, DAVENPORT, P. U. S. Mus. xxvii, p. 214, pl. vi, fig. 1.

2. ECTOPROCTA.

GYMNOLÆMA.

CYCLOSTOMA.

- †*Amalgamata*, I, **new division** for *Monticuliporidae*, *Heterotrypidae*, *Constellariidae*, *Batostomellidae*; *Integrata*, II, **new division** for *Amplexoporidae*, *Calloporidae*, *Trematoporidae*; ULRICH & BASSLER, Smithson. Collect. xlvii, pp. 15–55.
- †*Amplexopora columbiana*, p. 41, pl. xiii, figg. 1–4, *A. ampla*, p. 42, pl. xiii, figg. 7 & 8, pl. xiv, fig. 3, *A. cylindracea*, p. 43, pl. xiii, figg. 5 & 6, pl. xiv, figg. 4 & 5, American Paleozoic, ULRICH & BASSLER, t. c., **n. spp.**
- †*Anaphragma* **n. gen.** for *A. mirabile* **n. sp.**, American Paleozoic, ULRICH & BASSLER, t. c. p. 49, pl. xiii, figg. 9–11.
- †*Apsendesia patagonica*, Patagonia, Tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 21, pl. v, fig. 58, **n. sp.**
- †*Atactopora angularis*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 32, pl. viii, figg. 10–12, **n. sp.**
- †*Calloporina* **n. gen.** for *C. parva* **n. sp.**, American Paleozoic, ULRICH & BASSLER, t. c. p. 48, pl. xiv, figg. 13–16.
- †*Cellopora mamillata*, *C. globularis*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 18, pl. iv, figg. 48 & 49.
- †*Ceriopora phlyctænodes*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 30, pl. xxxv, figg. 48–50.
- †*Constellaria teres* **n. sp.** *C. florida* **n. var. emaciata**, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 37.
- Crisia howensis*, *C. cuneata*, Lord Howe Island, MAPLESTONE, P. R. Soc. Victoria xvii, pp. 389 & 390, pl. xxix, figg. 10–12, **n. spp.**
- †*Crisina striatopora*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 406, pl. cxvii, figg. 1–4, **n. sp.**

- +*Cyphotrypa acervulosa*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 30, pl. viii, figg. 1-3.
- +*C. n. gen.* for *C. frankfortensis*, p. 30, pl. viii, figg. 7-9, *C. wilming-tonensis*, p. 31, figg. 4-6, American Paleozoic, ULRICH & BASSLER, t. c., **n. spp.**
- +*Cyrtopora clavata n. sp.*, p. 21, pl. v, figg. 64 & 65, *C. watersi n. n.* for *Tubulipora campicheana* Waters, p. 21, pl. v, fig. 61, CANU, Mem. Soc. geol. France, Pal. xii (3).
- +*Dekazella foliaceu*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 28, pl. vii, figg. 10-12, **n. sp.**
- +*Diastopora suborbicularis*, Patagonia, tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 19, pl. v, p. 57; *D. obelia* var. *arctica n. n.* *D. intricaria*, Franz-Josef Land, WATERS, J. Linn. Soc. London xxix, pp. 171, pl. xxi, fig. 1, pp. 173, pl. xix, figg. 1-13; +*D. suborbicularis*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 29, pl. xxxv, fig. 44.
- Entalophora proboscidea*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 91, pl. ix, fig. 4.
- +*Fenestella*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, figg. 44-62; +*F. spp.* Colorado, Girty, Prof. Papers U. S. Geol. Survey xvi, 1903, pp. 339 & 340; +*F. Belfast*, LAMPLUGH, etc., Mem. Geol. Surv. Ireland 1904.
- +*Heteropora clavata*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 29, pl. xxxv, figg. 45-47; +*H. dollfusi*, *H. pachundakii*, p. 224, figg. 2 & 3, CANU, Bull. Inst. Egypt iv, 1.
- +*Heterotrypa parvulipora*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, pl. 26, pl. xi, figg. 4-6, **n. sp.**
- +*Homotrypella nodosa*, American Paleozoic, ULRICH & BASSLER, t. c. p. 21, pl. vii, figg. 1-3, **n. sp.**
- Hornera lichenoides*, Franz-Josef Land, characters, WATERS, J. Linn. Soc. London xxix, p. 168, figg. 1-6.
- Idmonea atlantica*, p. 166, pl. xxi, figg. 2 & 3, *I. tumida*, p. 168, fig. 45, WATERS, t. c.
- +*I? expansa*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 404, pl. cix, figg. 6, 7, 8; *I. atlantica*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 90, pl. ix, fig. 5 : **n. spp.**
- Lichenopora fimbriata*, Antarctic, WATERS, t. c. p. 96, pl. viii, fig. 20; *L.*, budding, MARCHAL, Arch. Zool. exp. xxxii, pp. 321 & 322; +*L. hispida?* Patagonia, Tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 20, pl. v, fig. 60.
- +*Lioclema monroei*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 39, pl. xi, figg. 10-12, **n. sp.**
- +*Mesenteripora*, USSING, Danmarks geol. Unders. ii, 2, p. 98, fig. 31.
- +*Mesotrypa echinata*, p. 22, pl. vii, figg. 4-6, *M. angularis*, p. 23, figg. 7-9, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, **n. spp.**
- +*Monticulipora cleavelandi*, Ohio, Paleozoic, ULRICH & BASSLER, t. c. p. 16, pl. vi, figg. 4-6.
- +*M. epidermata*, American Paleozoic, ULRICH & BASSLER, t. c. p. 17, **n. sp.**
- +*Orbignyella n. gen.* for *O. sublamellosa n. sp.*, Tennessee, Paleozoic, ULRICH & BASSLER, t. c. p. 19, pl. vi, figg. 7-9.
- +*Petigopora offula*, American Paleozoic, ULRICH & BASSLER, t. c. p. 32, **n. sp.**
- +*Phalangella*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, pp. 52-55, figg. 16-30.
- +*Polypora*, Paleozoic, development, CUMINGS, t. c. figg. 71-77.
- +*P. n. sp.* (unnamed), Colorado, Girty, Prof. Papers U. S. Geol. Survey xvi, 1903, p. 338.

- +*Prasopora patera*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 20, pl. vi, figg. 11-14, **n. sp.**
- +*Prismopora triangulata*, Colorado, GIRTY, Prof. Papers U. S. Geol. Survey xvi, 1903, p. 340, pl. 1, fig. 5.
- +*Proboscina levigata*, *P. microstoma*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 19, pl. v, figg. 55 & 56, **n. spp.**
- +*Reticulipora patagonica*, Patagonia, Tertiary, CANU, t. c. p. 20, pl. v, figg. 62, 63, 66.
- +*Rhombotrypa* **n. gen.**, characters and composition, American Paleozoic ULRICH & BASSLER, Smithson. Collect. xlvii, p. 44. [No spp. named.]
- +*Stigmatella* **n. gen.** for *S. crenulata*, p. 34, pl. ix, figg. 1-4, pl. xiv, figg. 1 & 2, *S. spinosa*, p. 34, pl. ix, figg. 5-8, *S. personata*, p. 35, pl. xii, figg. 1-3, *S. interporosa*, p. 35, pl. xii, figg. 4 & 5, *S. nana*, p. 36, pl. x, figg. 7-10, pl. xiv, figg. 11 & 12, *S. nicklesi*, p. 36, pl. x, fig. 1-3, pl. xiv, figg. 9 & 10, American Paleozoic, ULRICH & BASSLER, t. c., **n. spp.**
- Stomatopora major*, *S. eburnea*, *S. ? incrassata*, p. 88, pl. viii, fig. 16, pl. ix, figg. 7 & 8, Antarctic regions, WATERS, Exp. Antarct. Belge 1904; +*S.*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, figg. 81-83; +*S.*, Jurassic forms of "genus," LANG, Geol. Mag. i, 7, pp. 315-322, 11 figg.; +*S. inflata*, New York, RUEDEMANN, Rep. N. York Mus. lv, p. 12, pl. i, figg. 2 & 3.
- +*Theonoe glomerata*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 406, pl. cix, fig. 4, **n. sp.**
- +*Tubulipora anhaltina*? Patagonia, Tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 19, pl. v, fig. 59.
- +*Unitrypa*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, figg. 63-70.

CHEILOSTOMA.

- +*Cheilostomata*; tabulated list of fossil Victorian Tertiary forms; 466 spp.; comparison of fossil and recent forms, MAPLESTONE, P. Soc. Victoria xvii, i, pp. 182-218.
- +*Adéona fourtauli*, Egypt, CANU, Bull. Inst. Egypt iv, p. 226, pl. 1, figg. 1-5.
- Adeonellopsis umbilicata*, Maryland, ULRICH & BASSLER, Maryland geol. Survey 1904, p. 417, pl. cxiii, figg. 4 & 5, pl. cxiv, fig. 5.
- +*Amphiblestrum constrictum*, p. 413, pl. cxv, figg. 6 & 7; *A. agellus*, p. 414, pl. cxii, fig. 7, Maryland, ULRICH & BASSLER, t. c., **n. spp.**
- +*Aspidostoma hexagonalis*, *A. porifera* **n. spp.**, *A. ortmanni* **n. n.** for *A. giganteum* Örtmann, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 13, pl. iii, figg. 28-33.
- +*Aulopocella* **n. n.** for *Solenopora*; *A. tubulifera* (sole species), MAPLESTONE, Victorian Natural. xx, 8, p. 99.
- Beania magellanica*, p. 28, pl. viii, fig. 7, *B. hydesia*, p. 30, pl. i, fig. 7, Antarctic, WATERS, Exp. Antarct. Belge 1904.
- Bicellaria grandis*, Antarctic, WATERS, t. c. p. 26, pl. i, fig. 6, **n. sp.**
- Bifaxaria denticulata*, *B. rustica*, pp. 59 & 60, pl. viii, figg. 14-19, Antarctic, WATERS, t. c.
- +*Bimicroporella* **n. gen.** for *B. ventricosa* **n. sp.**, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 12, pl. ii, fig. 26.
- Brettia longa*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 26, pl. i, fig. 2^b, **n. sp.**
- Bugula bicornis*, *B. reticulata*, **n. var. spinosa**, pp. 21 & 22, figg. 2 & 3, WATERS, t. c.; *B.* (or *Acamarchis*) *neritina*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 593, fig. 6.
- Cellaria dennanti*, p. 36, pl. ii, fig. 9, pl. viii, fig. 4, *C. dubia*, p. 37, pl. ii, fig. 12, *C. malvinensis*, p. 37, pl. ii, fig. 10, pl. viii, fig. 5, Antarctic,

- WATERS, Exp. Antarct. Belge 1904; +*C. contigua*, *C. angustiloba*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 9, pl. ii, figg. 17, 19 & 20.
- +*C. subsetigera*, Patagonia, CANU, t. c. p. 9, pl. ii, figg. 16-18, **n. sp.**
- +*Cellarina patagonica*, Patagonia, CANU, t. c. p. 8, pl. i, figg. 12-14, **n. sp.**
- +*Cellepora plana*, Egypt, CANU, Bull. Inst. Egypt iv, p. 228, pl. ii, figg. 9; +*C. castrocarensis*, *C. retusa*, Tunis, CANU, Explor. Sci. Tunis 1904, pp. 23 & 27, pls. xxxiv & xxxv, figg. 30, 39-42.
- +*C. massalis*, *C. cribrosa*, pp. 428 & 429, pl. cxvii, figg. 3-6, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- Chaperia spinosissima*, CALVET, Ergebn. Hamburg. Magalhaen. Reise 1904, p. 12, pl. i, fig. 2.
- C. spinosissima*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 51, **n. sp.**
- +*Cribricella* **n. gen.** for *C. crassicolis* **n. sp.**, Tunis, CANU, Explor. Sci. Tunis 1904, p. 20, pl. xxxiv, fig. 24.
- +*Cribrilina radiata*, Tunis, CANU, t. c. p. 19, pl. xxxiv, fig. 23.
- +*Cupularia denticulata*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 414, pl. cxii, fig. 6.
- +*C. biculata*, *C. punctata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 10, pl. ii, figg. 21-23, **n. spp.**
- Cyphonautes compressus*, North Sea, LOHMANN, Ergebn. Plankton Exped. iv, p. 54, pl. vii, fig. 21.
- C. sargassi*, *C. æquatorialis*, *C. gibbus*, *C. oblongus*, *C. parvus*, North Sea, LOHMANN, t. c. pp. 53-57, pl. vii, figg. 22-26, **n. spp.**
- +*Ditaxia lerichei*, *D. orbiculata*, Egypt, CANU, Bull. Inst. Egypt iv, p. 225, figg. 4 & 5.
- +*Electra sinuosa*, Patagonia, CANU, Mem. Soc. geol. France xii (3), p. 5, pl. i, figg. 1 & 2, **n. sp.**
- +*Eschara* sp., USSING, Danmarks geol. Unders. ii, 2, p. 98, fig. 30.
- Flustra renilla*, CALVET, Ergebn. Hamburg. Magalhaen. Reise 1904, p. 10, pl. i, fig. 3.
- +*Hiantopora patagonica*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 18, pl. iv, figg. 49 & 50, **n. sp.**
- +*Hippoporina hypsostoma*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 22, pl. xxxiv, figg. 28 & 29, +*H. varians*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 14, pl. iii, fig. 38.
- +*H. radicifera*, Patagonia, CANU, t. c. p. 14, pl. iii, figg. 34-37, **n. sp.**
- Hippothoa divaricata*, *H. distans*, pp. 53 & 54, pl. vii, fig. 3, pl. iii, fig. 8, Antarctic, WATERS, Exp. Antarct. Belge 1904.
- Lepralia galeata*, Antarctic, WATERS, t. c. p. 48, pl. viii, fig. 11.
- L. gemelliporoides*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. France xxix (3), p. 55; +*L. maculata*, p. 423, pl. cxv, figg. 8 & 9, pl. cxviii, fig. 7, *L. montifera*, p. 424, pl. cxvi, fig. 5, *L. marylandica*, p. 425, pl. cxvii, fig. 2, *L. reversa*, p. 226, pl. cxiii, figg. 1 & 2, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- +*Lunulites parvula*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 8, pl. i, figg. 10 & 11, **n. sp.**
- +*Mastigophora hyndmanni*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 26, pl. xxxv, fig. 36.
- Membranipora membranacea*, characters, LOPPENS, Ann. Soc. zool. Belgique xxxviii, Bull. pp. cxlii & cxliii; *M. membranacea*, natural history in Roumania, CHIRICA, pp. 13 & 14, Ann. Univ. Jassy iii; *M. incrustans*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 31, pl. ii, fig. 15; *M. longispina*, CALVET, Ergebn. Hamburg. Magalhaen. p. 14, pl. i, fig. 1; +*M. artini*, Egypt, CANU, Bull. Inst. Egypt iv, p. 228, pl. ii, figg. 6 & 7; +*M. elliptica*, p. 13, pl. xxxiii, fig. 1, *M. lacroixii*, p. 14, fig. 2, *M. eocena*, p. 15, fig. 5-11, *M. laxa*, p. 17, pl. xxxiv, fig. 18, Tunis, CANU, Explor.

- Sci. Tunis 1904; +*M. concatenata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 6, pl. i, figg. 5, 6, 7.
- +*M. oblongula*, p. 407, pl. cx, figg. 2-5, *M. fossulifera*, p. 408, fig. 1, *M. caminosa*, p. 409, pl. cxi, figg. 3 & 4, *M. germana*, p. 410, figg. 8 & 9, *M. parvula*, figg. 1 & 2, *M. bifoliata*, p. 411, pl. cxii, figg. 2-4, *M. nitidula*, p. 412, fig. 1, *M. fistula*, p. 413, fig. 5, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904; +*M. varians*, p. 14, pl. xxxiii, fig. 3, *M. excavata*, p. 15, fig. 4, *M. quadrata*, p. 16, fig. 12, *M. flicki*, p. 16, figg. 13-15, *M. bioculata*, p. 17, pl. xxxiv, figg. 16 & 17, *M. rotundicella*, p. 18, fig. 19, Tunis, CANU, Explor. Sci. Tunis 1904; +*M. laevigata*, *M. flabellata*, Patagonia, CANU, Mem. Soc. geol. France xii, pp. 6 & 7, pl. i, figg. 3, 4 & 8; *M. longispina*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 52, **n. spp.**
- Membraniporella magellanica*, CALVET, Ergebn. Hamburg. Magalhaen. p. 15, pl. i, fig. 4.
- +*M. magellanica*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 53, **n. sp.**
- +*Micropora crassopora*, Egypt, CANU, Bull. Inst. Egypt iv, p. 227, pl. ii, fig. 8; +*M. coriacea*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 10, pl. i, fig. 15.
- +*Microporella malusi*, Patagonia, CANU, t. c. p. 11, pl. iii, fig. 27; *M. malusii*, *M. divaricata*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 42, pl. iii, fig. 4, p. 46, pl. iii, fig. 1; +*M. violacea*, *M. ciliata*, pp. 21 & 22, pl. xxxiv, figg. 25, 26 & 27, Tunis, CANU, Explor. Sci. Tunis 1904.
- +*M. fallax*, *M. divaricata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 11, pl. ii, figg. 24 & 25; +*M. præciliata*, p. 415, pl. cx, fig. 6, pl. cxiii, fig. 3, *M. inflata*, p. 416, pl. cx, fig. 7, *M. ? bifoliata*, p. 417, pl. cxiii, figg. 6-8, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- Mucronella centrota*, Lord Howe Island, MAPLESTONE, P. R. Soc. Victoria xvii, p. 389, pl. xxix, fig. 9, **n. sp.**
- +*Onychocella angulosa*, *O. magniaperta*, pp. 18 & 19, pl. xxxiv, figg. 20-22, Tunis, CANU, Explor. Sci. Tunis 1904; +*O. boulei*, Egypt, CANU, Bull. Inst. Egypt iv, 4, p. 223, fig. 1.
- Osthimosia signata*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 73, pl. vii, fig. 4.
- +*Palmicellaria convoluta*, p. 427, pl. cxvi, figg. 2-4, *P. punctata*, p. 428, pl. cxvi, fig. 1, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- +*Phylactella? orbiculata*, *P. ventricosa*, Tunis, CANU, Explor. Sci. Tunis 1904, pp. 26 & 27, pl. xxxv, figg. 37 & 38, **n. spp.**
- Porella rouzaudi*, CALVET, Ergebn. Hamburg. Magalhaen. p. 30, pl. ii, fig. 6; +*P. escharella*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 17, pl. iv, fig. 53.
- P. rouzaudi*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 57, **n. sp.**
- +*Poricella* **n. gen.** for *P. maçonnica* **n. sp.**, Tunis, CANU, Explor. Sci. Tunis 1904, p. 28, pl. xxxv, fig. 43.
- +*Retepora prisca*, SMYČKA, Vestník. Klub. Prostejove vii, p. 61.
- +*R. quadripunctata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 15, pl. iv, fig. 54; +*R. doverensis*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 422, pl. cxi, figg. 5-7, pl. cxv, figg. 1-5: **n. spp.**
- +*Rhamphostomella perforata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 15, pl. iii, fig. 39, **n. sp.**
- Schizoporella simplex*, *S. hosteensis*, *S. eatoni*, pp. 51 & 52, pl. iii, figg. 6, 11 & 10, Antarctic, WATERS, Exp. Antarct. Belge 1904; *S. isabelliana?* Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 593, fig. 5; +*S. unicornis*,

- S. linearis*, *S. auriculata*, Tunis, CANU, Explor. Sci. Tunis 1904, pp. 24-26, pl. xxxiv, figg. 31-35; *S. ornata*, p. 26, pl. ii, fig. 4, *S. pellucidula*, p. 27, pl. ii, fig. 3, CALVET, Ergebn. Hamburg. Magalhaen.; †*S. informata*, p. 419, pl. cxiv, figg. 6-10, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904.
- S. gibberula*, *S. heteromorpha*, pp. 387 & 388, figg. 3-6, Lord Howe Island, MAPLESTONE, P. Soc. Victoria xvii; *S. ornata*, *S. pellucidula*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 56; †*S. subquadrata*, p. 420, pl. cxiv, fig. 1, pl. cxviii, figg. 5 & 6, *S. latisinuata*, p. 421, pl. cxiv, figg. 2-4, *S. doverensis*, p. 421, pl. cxvii, fig. 1, *S. cumulata*, p. 422, pl. cxvii, fig. 7, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904: **n. spp.**
- †*Schizotheca serratimargo*, nomenclature, NEVIANI, Boll. Soc. geol. Ital. xxiii, pp. 270-276, pl. x.
- Scrupocellaria funiculata*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 23, pl. viii, fig. 1.
- Smittia marsupium*, *S. marionensis*, pp. 61 & 62, pl. iv, 4, pl. viii, 8, Antarctic, WATERS, t. c.; †*S. (Reussia) seguenzai*, p. 16, pl. iv, fig. 42, *S. (Mucronella) grotriani*, fig. 46, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3).
- †*S. incisa*, p. 15, pl. iv, figg. 39 & 40, *S. subtorquata*, fig. 44, *S. patagonica*, p. 16, fig. 45, *S. expectans*, fig. 43, *S. coronata*, figg. 51 & 52, Patagonia, CANU, t. c. **n. spp.**
- Thalamoporella michaelsoni*, CALVET, Ergebn. Hamburg. Magalhaen. p. 18, pl. ii, fig. 1.
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- +*Ptychocladia* **n. gen.** for *P. agellus* **n. sp.**, American Paleozoic, ULRICH & BASSLER, Smithsonian. Collect. xlv, p. 290, pl. lxvii, fig. 10.
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- +*R. attenuata*, p. 268, pl. lxvi, figg. 4 & 5, *R. robusta*, p. 269, fig. 6, *R. tenuis*, p. 270, figg. 7-9, *R. medialis*, p. 270, fig. 10, *R. keokukensis*, p. 272, fig. 11, American Paleozoic, ULRICH & BASSLER, t. c. **n. spp.**
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- +*Vinella repens*, p. 274, pl. lxviii, figg. 1-3, *V. radialis*, p. 274, fig. 4, *V. radicipermis*, fig. 7, *V. radicipermis conferta*, p. 275, figg. 5 & 6, *V. ? radians*, p. 276, pl. lxv, figg. 9 & 10, synonymy, characters, ULRICH & BASSLER, t. c.
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X. CRUSTACEA.

(Including
GIGANTOSTRACA AND PYCNOGONIDA.)

BY

W. T. CALMAN, D.Sc.

CONTENTS.

	Page		Page
Introduction	2	b. Indo-Pacific	25
Crustacea		c. Arctic and Ant- arctic	26
I. TITLES	3	2. Geological	26
II. SUBJECT-INDEX		IV. SYSTEMATIC	
1. Morphology	19	A. Malacostraca	
2. Physiology	19	1. Decapoda	27
3. Reproduction & Develop- ment	20	a. Brachyura	27
4. Autotomy & Regeneration	20	Oxyrhyncha	28
5. Bionomics	21	Cyclometopa	28
a. General	21	Catometopa	30
b. Habitats	21	Oxystomata	31
c. Symbiosis & Parasi- tism	21	Dromiacea	31
6. Variation & Abnormalities	22	b. Anomura	32
7. Phylogeny & Classification	22	Galatheidea	32
8. Miscellaneous	22	Paguridea	32
III. DISTRIBUTION		Hippidea	33
1. Geographical	22	c. Macrura	33
A. Land & Fresh-water	22	Nephropsidea	33
a. Palæarctic Region	23	Eryonidea	34
b. Oriental	23	Loricata	34
c. Ethiopian	24	Thalassinidea	34
d. Nearctic	24	Caridea	34
e. Neotropical	24	Stenopidea	37
f. Australian	24	Penæidea	37
B. Marine	24	Incertæ Sedis	37
a. Atlantic	25	2. Schizopoda	38
		3. Stomatopoda	38
		4. Cumacea	39

	Page		Page
5. Tanaidacea . . .	39	2. Copepoda . . .	49
6. Isopoda . . .	39	3. Branchiura . . .	52
Asellota . . .	39	4. Ostracoda . . .	53
Phreatoicoidea . .	40	5. Cirripedia . . .	55
Flabellifera . . .	40		
Valvifera . . .	41	Gigantostraca	
Epicaridea . . .	41	I. TITLES	56
Oniscoidea . . .	42	II. SUBJECT-INDEX . . .	57
7. Amphipoda . . .	43	III. DISTRIBUTION. . . .	57
Gammarina . . .	43	IV. SYSTEMATIC	
Hyperina . . .	46	Xiphosura.	58
Caprellina . . .	46	Trilobita	58
8. Phyllocarida . . .	47	Eurypterida	59
B. Entomostraca		Pycnogonida. Titles etc. .	60
1. Branchiopoda. . .	47		
a. Phyllopoda. .	47		
b. Cladocera . .	47		

INTRODUCTION.

THE number of titles recorded under Crustacea is less than last year (258 as against 280) but this is accounted for by the fact that the list has been closed at a much earlier date, before some of the foreign periodicals had reached the London libraries.

One of the most notable works published during 1904 is DOFLEIN'S (53) Report on the *Brachyura* of the "Valdivia" Expedition. Besides descriptions of some important new genera and species this memoir contains the results of an elaborate investigation into the structure of the eyes in deep-sea crabs. GRUVEL'S (71) Monograph of the Cirripedes is a very useful compendium of the group of which the author has done much to extend our knowledge during recent years. It is nothing short of an absurdity however that a book which was certainly published not later than November, 1904, should bear on its title page the date 1905.

THIELE'S memoirs on *Phyllocarida* (219) and *Branchiura* (218) contain many new observations on the morphology as well as on the classification of these interesting groups. ZOGRAF'S (252) investigation of the median eye and certain associated structures in the *Branchiopoda* is of great morphological interest. SMITH (198) has elucidated some points hitherto obscure in the remarkable metamorphosis of the Isopod *Gnathia*. BONNIER'S (17) important account of a remarkable parasitic Copepod was published in 1898 but appears to have escaped notice in other bibliographies as well as in our own. Miss MOSELEY (138) has discovered an additional gill hitherto overlooked by the innumerable students of the common Crayfish.

The chief physiological paper of the year is KEEBLE & GAMBLE'S (101) work on the colouration of Decapods, a subject to which they have previously made important contributions. Experiments on the "psychology" of Crustacea are recorded and discussed by BOHN (15), SPAULDING (200 & 201) and YERKES & HUGGINS (248). Regeneration is treated of by REED (170), MORGAN (137) and ARIOLA (11).

Plankton research as usual forms the subject of a large number of papers among which those of EKMAN (56) and WESENBERG-LUND (234) may be specially mentioned.

BOUVIER'S (19) preliminary account of "Mutations" in certain fresh-water prawns is of great interest in connection with current discussions on variation and heredity.

Among the many purely systematic works there may be mentioned the series of papers by various authors on collections from the Maldives (18 & 207), from Ceylon (34, 127 & 229) and from North Western America (87, 165 & 172).

Important papers on *Pycnogonida* are published by CARPENTER (1), COLE (2) and LOMAN (5 & 6). The most interesting discovery however is HODGSON'S (3) *Pentanymphe*, which will necessitate a considerable modification of our views on the morphology of the group.

It may be mentioned that a second instalment of BUDDE-LUND'S "Revision of Crustacea Isopoda Terrestria" has appeared but is not included in the present Record since it seems probable that, like the first part (Zool. Rec. 1901, Crustacea, No. 25), it may have been published in some periodical not yet seen.

Though this is not the place for an expression of opinion on matters of nomenclature, the Recorder may draw attention to the grave danger of confusion arising out of the practice, now unhappily becoming common, of using old and well-known generic names in a new sense. It would greatly facilitate the work of the Recorder, at any rate, if authors who did so were careful to indicate in some way the particular genus with which they are dealing. To give an example, Miss RATHBUN (167) describes a new crab under the name of *Uca ærstedii*. Without a knowledge of the particular views which Miss Rathbun held on the subject of nomenclature at the date when the paper was published it would be difficult to discover to which of two well-known genera the new crab is supposed to belong.

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II. SUBJECT-INDEX.

1. MORPHOLOGY.

Morphology of Crustacea; LANKESTER (111): of *Malacostraca*; CALMAN (32): of *Isopoda*; RICHARDSON (173): of *Phyllocarida*; THIELE (219): of *Branchiura*; THIELE (218): of freshwater *Ostracoda*; JENSEN (92): of *Cirripedia*; GRUVEL (71).

External and internal anatomy of *Nephrops*; MEEK (129): of Stomatopod larvæ; JURICH (97): of *Gammarus*; CUSSANS (50): of *Saycia* (*Cladocera*); SARS (182): of *Argulus*; WILSON (238): of *Cirripedia*; GRUVEL (72, 74 & 75): of *Pæcilasma* (*Cirripedia*); HOFFENDAHL (86): of *Alcippe* (*Cirripedia*); GENTHE (65).

Segmentation of body in *Decapoda*, *Euphausiacea* and *Anaspides*; CALMAN (32).

Structure of copulatory appendages of *Cancer pagurus*; WILLIAMSON (237).

Rudimentary gill in *Astacus fluviatilis*; MOSELEY (138), LANKESTER (112).

Structure of digestive apparatus in *Astacus*; JORDAN (95).

Morphology of excretory organs in *Decapoda*, *Cumacea*, *Isopoda*, *Amphipoda*, *Cladocera*; LOŠKO (118): Maxillary- ("shell-") gland of *Stomatopoda*; CALMAN (32).

Structure of eyes and other sense-organs in deep-sea *Brachyura*; DOFLEIN (53): Unpaired eye, frontal organs and "Nackenorgan" in *Branchiopoda*; ZOGRAF (252): Supposed statocysts in Terrestrial *Isopoda*; WENIG (233).

Structure and arrangement of chromatophores in *Decapoda* and *Schizopoda*; KEEBLE & GAMBLE (101).

Attachment of muscles to exoskeleton in Crustacea; STAMM (204).

Histology of alimentary system in *Palinurus*; GUIEYSSE (77): of digestive glands of *Cymothoa* (*Isopoda*); MAZIARSKI (128).

Histology of heart in *Leptostraca*, *Isopoda*, *Amphipoda*, *Cumacea*, *Schizopoda*, *Stomatopoda*; GADZIKIEWICZ (61): in *Decapoda*; GADZIKIEWICZ (62).

2. PHYSIOLOGY.

Physiology of Crayfish; LATTER (113).

Physiology of digestion in *Astacus*; JORDAN (94 & 95).

Presence of "thalassine" (a toxic substance) in shrimps (*Crangon*); RICHET (176): Hæmocyanin in blood of *Decapoda*; KOBERT (104): Amyolytic ferment in blood of Crustacea; SELIER (193 & 194).

Phagocytic cells in *Amphipoda*; BRUNTZ (29 & 30).

Physiology of vision in deep-sea *Brachyura*; DOFLEIN (53).

Colour-Physiology of *Decapoda* and *Schizopoda*; KEEBLE & GAMBLE (101): Presence of mobile fat in chromatophores of *Hippolyte*; KEEBLE & GAMBLE (102).

Toxic property of distilled water for fresh-water *Gammarus*; BULLOT (31).

Reactions of *Daphnia* to light and heat; YERKES (247).

Effects of light and darkness on *Amphipoda* and *Isopoda*; VIRÉ (227).

Habit formation in *Cambarus*; YERKES & HUGGINS (248): Correlation of sensations in *Eupagurus*; BOHN (15): Experiments on "association" and memory in *Eupagurus*; SPAULDING (200) & (201).

Structural changes accompanying ecdysis in *Cancer*; WITTEN (239).

3. REPRODUCTION and DEVELOPMENT.

Reproduction and development of *Gammarus*; CUSSANS (50): of *Isopoda*; RICHARDSON (173): of *Cirripedia*; GRUVEL (71).

Reproductive cycle of *Callinectes hastatus*; PAULMIER (154): of *Cladocera* and *Copepoda*; EKMAN (56): of freshwater *Copepoda*; WOLF (240).

Breeding habits of *Cancer pagurus* and other *Decapoda*, impregnation, spawning, attachment of eggs; WILLIAMSON (237): Breeding habits of *Cambarus*; HARRIS (80): Breeding habits, young stages &c. of *Cambarus affinis*; ANDREWS (5): Copulatory appendages in *Cambarus*; MOENKHAUS (134).

Breeding habits of freshwater *Ostracoda*; JENSEN (92).

Proportion of sexes in *Carcinus mænas*; PUNNETT (162): in *Nephrops*; MCINTOSH (119).

Maturation divisions in testis of lobster; LABBÉ (107): Spermatogenesis in *Decapoda*; LABBÉ (109): Spermatozoa of *Cambarus* and *Astacus*; ANDREWS (6).

Oogenesis in *Cirripedia*; GRUVEL (73).

Fertilisation in Crustacea; LABBÉ (108).

Eggs and larval stages of *Argulus*; WILSON (238).

Formation and histology of the ephippium in *Daphnia*; WOLFF (242).

Embryology of *Cymothoa (Isopoda)*; NUSBAUM, abstract by HOYER (150).

Early stages of *Gammarus*, segmentation, formation of germ-layers; HEIDECHE (82): Segmentation of egg and origin of germinal layers in *Sacculina*; ABRIC (1).

Metamorphosis and life-history of *Gnathia maxillaris (Isopoda)*; SMITH (198).

Larvæ of *Stomatopoda*; JURICH (97): of *Thaumatops (Amphipoda, Hyperideae)*; WOLTERECK (243): of some parasitic *Copepoda*; GADD (60): of *Pacilasma (Cirripedia)*; HOFFENDAHL (86): of *Cirripedia, Apoda*; STEUER (212).

Post-larval development of *Cancer pagurus* and *Carcinus mænas*; WILLIAMSON (237): Young (post-larval) stages of *Platymaia* and other deep-sea crabs; DOFLEIN (53).

Development and inheritance of chromatophore-system in *Decapoda* and *Schizopoda*; KEEBLE & GAMBLE (101).

4. AUTOTOMY and REGENERATION.

Regeneration in *Alpheus*; BRUES (28).

Regeneration of first leg of Crayfish [genus and species not stated], origin of muscles from ectoderm, production of double legs &c.; REED (170), MORGAN (137).

Eye replaced by antenna-like organ (natural heteromorphic regeneration) in *Palinurus*; ARIOLA (11).

5. BIONOMICS.

a. General.

Bionomics, habits &c.: of deep-sea *Brachyura*; DOFLEIN (53): of *Birgus latro*; NAPOLI (142): of *Cambarus uhleri*; HAY (81): of *Astacus*; LATTER (113): of *Isopoda*; RICHARDSON (173): of *Niphargus* and *Cæcosphæroma*; GAL (63): Alpine and Arctic *Phyllopoda*, *Cladocera* and *Copepoda*, conditions of life &c.; EKMAN (56): Habits of *Mysis relicta*, *Pallasiella quadrispinosa* and *Pontoporeia affinis* referred to their supposed origin in the Glacial Period; SAMTER & WELTNER (180): of *Gammarus pulex*; CUSSANS (50): of deep-sea Hyperid *Amphipoda*; WOLTERECK (243): of *Saycia* (*Cladocera*); SARS (182): of freshwater *Copepoda*; WOLF (240): of freshwater *Ostracoda*; JENSEN (92): of *Cirripedia*; GRUVEL (71): of *Alcipe*; GENTHE (65).

General notes on *Gammaridae* of Lake Baikal; KOROTNEFF (106).

Ecdysis, rate of growth, habitats, migrations, of *Cancer pagurus*; WILLIAMSON (237).

Seasonal cycle of freshwater *Cladocera* and *Copepoda*; WESENBERG-LUND (234): Seasonal distribution of *Cladocera* in Norfolk; GURNEY (78).

Gregarious Crustacea from Ceylon; STEBBING (208).

Function of antennules in *Albunea* and *Lepidopa*; BENEDICT (14).

Oniscus feeding on lichens; STAHL (203).

Podon (*Cladocera*) attacking post-larval fish; SCOTT (192).

Ant (*Leptogenys*) preying upon terrestrial *Isopoda*; WHEELER (235).

b. Habitats.

Habitats of *Cambarus*; HARRIS (80).

Amphibious habits of *Canthocamptus subterraneus* (*Copepoda*); CARL (35).

Munidopsis polymorpha in a cave on the Island of Lanzarote; CALMAN (33).

Occurrence of *Paracartia* under peculiar physical conditions in oyster beds of W. Norway; SARS (183).

Salt lakes, *Phyllopoda*, *Cladocera*, *Ostracoda*, *Copepoda*; ENTZ (57): Salt lake, Madagascar, Amphipod; COUTIÈRE (47).

Brackish water Crustacea; GURNEY (78).

Subterranean Crustacea; ALZONA (4), CARL (35), CHOBOUT (41), FLORENTIN (58), GAL (63), GROCHOWSKI (69), VIRÉ (227 & 228): *Niphargus* in deep water of lakes; KANE (98): *Cambarus*; HARRIS (80).

Plankton, Marine; ANON (9), BROWNE & VALLENTIN (26), CLEVE (43), SARS (184), STEBBING & FOWLER (209), WOLFENDEN (241).

Plankton, Freshwater; BREHM & ZEDERBAUER (25), LINDER (114), MONTI (136), SKORIKOW (197), WESENBERG-LUND (234), ZACHARIAS (249).

c. Symbiosis and Parasitism.

Commensalism of *Arete* (*Caridea*) with *Heterocentrotus* (*Echinoidea*); COUTIÈRE (46).

Parasitic Crustacea: on a Whale, *Cirripedia* and *Cyamidae*, STEAD (205); on Fish, *Isopoda*, RICHARDSON (173), *Copepoda*, BAUDOUIN (13), MICULICICH (132), SCOTT (192), *Copepoda* and *Branchiura*, A. SCOTT (190), GADD (60), *Branchiura*, THIELE (218), WILSON (238); on Crustacea, *Epicaridea*, RICHARDSON (173), STEBBING (206) & (207), PATIENCE (152), *Copepoda*, HANSEN (79), SCOTT (191); On Echinoderma, Gall-forming Copepod on an Echinoid, BONNIER (17).

Tertiary parasitism of *Eumetor* (*Epicaridea*) on *Sacculina*—*Pinnotheres*—*Spondylus*; PÉREZ (158).

Parasites of Crustacea: *Epicaridea* and other Crustacea, see above; Microsporidian parasite in *Carcinus mœnas*; PÉREZ (159).

6. VARIATION and ABNORMALITIES. [See also 4, above.]

Statistical investigation of variation in *Atyaephyra*; BROŽEK (27).

Mutations in *Atyidae*; BOUVIER (19).

Variation in *Cladocera*; EKMAN (56), LINDER (114): Local variations of *Holopedium*; STINGELIN (213).

Colour-variety of *Astacus*; BOUVIER (21).

Case of "reversion" in *Scalpellum*; HOEK (85).

Variation in number of ♂ genital apertures in *Nephrops*; MCINTOSH (119).

Dimorphism in *Gnathia maxillaris* (*Isopoda*); SMITH (198).

Experimental evidence as to direct influence of temperature on variation of *Cladocera*; OSTWALD (151).

Abnormality in leg of *Cambarus*; ANDREWS (7): Abnormal chelæ of *Cancer* and *Homarus*; SCHERREN (188).

7. PHYLOGENY and CLASSIFICATION.

Systematic relationships of Crustacea; LANKESTER (111): of *Phyllocarida*; THIELE (219): of *Branchiura*; THIELE (218).

Classification of *Malacostraca*; CALMAN (32), GROBBEN (68): of *Cirripedia*; GRUVEL (71).

Relationship of *Pollicipes* and *Scalpellum*; HOEK (85).

Generic and sexual characters in *Sphæromida* (*Isopoda*); HOLMES (88).

Systematic importance of chromatophore-system in *Decapoda* and *Schizopoda* (incl. *Anaspides*); KEEBLE & GAMBLE (101).

8. MISCELLANEOUS.

Bibliography for 1895–1897; GRÜNBERG, LUCAS & THIELE (70).

General account of Crustacea; GROBBEN (68).

Guide to dissection of Crayfish; ANGLAS (8).

Size of *Macrocheira*; ANON (10).

Nomenclature: GIARD (66), RATHBUN (166 & 168), RICHARDSON (175).

Economic:—Crustacea as food of freshwater fish; GUCCINI (76): Problems connected with shrimp (*Crangon vulgaris*) fishery; HERDMAN (83): Artificial hatching of lobsters; HERDMAN (84): Crab and Lobster fisheries of Northumberland; MEEK (130): Edible Crustacea of Thames Estuary; MURIE (141): Crab fishery of New York; PAULMIER (154): Crustacea in relation to purification and restocking of rivers; WEIGELT (231): Plankton investigations in relation to fish culture; ZACHARIAS (249).

III. DISTRIBUTION.

1. GEOGRAPHICAL.

Distribution of *Isopoda*; RICHARDSON (173): of *Argulidae*; THIELE (218).

A. LAND and FRESH-WATER (including SALT LAKES).

Distribution of *Uridina* and *Potamon* (*Decapoda*); ROUX (178): of *Laophonte* (*Copepoda*); ZYKOFF (255).

New localities for some Land and Freshwater *Brachyura*; DOFLEIN (53): for *Atyidae* (*Caridea*); BOUVIER (20).

a. *Palæarctic Region.*

Alpine *Phyllopoda*, *Cladocera*, *Copepoda*, distribution, relation to Glacial Period &c.; EKMAN (56).

Faroe Is., terrestrial *Isopoda*; SCHARFF (187).

British Islands: terrestrial *Isopoda*; NORMAN & BRADY (149): *Ostracoda*; BRADY (22).

Scotland: Edinburgh, *Cladocera*; SPRAGUE (202).

England: East Norfolk, fresh- and brackish-water *Cladocera*, *Copepoda*, *Cirripedia*, *Isopoda*, *Amphipoda*, *Schizopoda*, *Decapoda*; GURNEY (78): Cambridgeshire, *Cladocera* and *Ostracoda*; CUNNINGTON (48): Kent, *Niphargus* (*Amphipoda*); KANE (98).

Ireland: Co. Dublin and Co. Down, *Isopoda*; WELCH (232): Sligo, *Amphipoda* and *Isopoda*; PATTERSON (153): Sligo, *Copepoda* and *Cladocera*; KANE (100): Lough Mask, *Niphargus* (*Amphipoda*); KANE (98): Lough Corrib, *Mysis relicta*; KANE (99).

France: Sainte-Reine, Moselle, *Isopoda*; FLORENTIN (58): Caves of Padirac, Lot, *Copepoda*, *Amphipoda*, *Isopoda*; VIRÉ (228): Tharaulx, Gard, cave *Isopoda*; CHOBOUT (41).

Germany: Thuringia, Saxony and Schleswig, *Copepoda*, *Cladocera*, *Ostracoda*; ZACHARIAS (249): Eppendorf moor, near Hamburg, *Isopoda*, *Amphipoda*, *Ostracoda*, *Copepoda*; ULMER (224): Havelsee, *Cladocera*; KEILHACK (103): S. Germany and Tyrol, *Isopoda*, n. spp.; KOCH (105).

Switzerland: Lac de Bret, *Cladocera*, *Copepoda*; LINDER (114).

Italy: subterranean *Amphipoda* and *Isopoda*; ALZONA (4): North Italy, Alpine lakes, *Copepoda*, *Ostracoda*, *Cladocera*; MONTI (136): Vallée d'Aoste, *Copepoda*, *Ostracoda*, *Cladocera*; PAVESI (155).

Austria: Galicia, *Isopoda*; DYDUCH (55): S. Tyrol, *Copepoda*, *Cladocera*, n. sp.; BREHM & ZEDERBAUER (25).

Scutari Lake, Albania, *Caridea*; BROŽEK (27).

Denmark: *Ostracoda*; JENSEN (92): *Cladocera*, *Copepoda*; WESENBERG-LUND (234).

Mountains of North Sweden, *Phyllopoda*, *Cladocera*, *Copepoda*; EKMAN (56).

Russia: Finland, parasitic *Copepoda* n. spp. and *Branchiura*; GADD (60): R. Neva and Lake Ladoga, *Copepoda* and *Cladocera*; SKORIKOW (197): Kolgujev I., *Schizopoda*, *Amphipoda*, *Phyllopoda*, *Cladocera*, *Copepoda*; ZYKOFF (256): Seim River, *Cladocera*, *Copepoda*; ZYKOFF (253): Seliger See, *Cladocera*, *Copepoda*; ZYKOFF (254): Crimea, *Copepoda* n. sp., *Isopoda* n. sp.; CARL (35): Lake Abraou, Caucasus, Crustacea; SKORIKOW (196): Ponto-Aralo-Caspian region, Crustacea, *Amphipoda* n. spp.; SOWINSKY (199).

Siberia: Lake Baikal, Crustacea; KOROTNEFF (106), YAKHONTOV (246).

Turkestan: *Copepoda* n. spp., *Cladocera* n. spp., *Phyllopoda*, *Ostracoda* n. spp.; DADAY (51): Murgali River, *Cladocera*, *Copepoda*; MEISSNER (131).

China: *Caridea* n. sp.; BOUVIER (20): South Hu-peh, *Palaemon*; DE MAN (123).

Syria, *Caridea* n. sp.; BOUVIER (20).

b. *Oriental Region.*

Ceylon, *Caridea* n. sp.; BOUVIER (20).

Minikoi, terrestrial *Isopoda*; STEBBING (207).

Sumatra, Java, Singapore, Bangkok, Saigon, *Cladocera* n. spp.; STINGELIN (215).

Cochin China, *Decapoda*, *Brachyura* n. spp.; DE MAN (122).
Celebes, *Caridina* n. spp., *Potamon* n. varr.; ROUX (178).

c. *Ethiopian Region.*

W. Africa: *Caridea* n. spp.; BOUVIER (20): Liberia, Ashantee, Camaroons, Congo, Benguella, *Palæmon*; DE MAN (123).

Galla country, *Phyllopoda* n. sp.; THIELE (220).

Natal, *Ostracoda* n. spp., *Copepoda* n. spp., *Cladocera* n. sp.; BRADY (22).

Madagascar, *Caridea* n. spp.; BOUVIER (20): Salt lake Tsimanampet-sotsa, Mahafaly region, *Amphipoda* n. sp.; COUTIÈRE (47).

Seychelles, *Caridea* n. sp.; BOUVIER (20).

d. *Nearctic Region.*

N. and Centr. America, *Epicaridea* n. spp.; RICHARDSON (173):
N. America, *Cambarus*, summary of distrib. of all spp.; HARRIS (80).

North West America: *Amphipoda*; HOLMES (87): *Isopoda* n. spp.;
RICHARDSON (172).

New York State, *Oniscoidea* n. spp.; STOLLER (217).

Georgia, *Branchiura* n. sp.; WILSON (238).

Texas, *Branchiura* n. sp.; THIELE (218).

Mexico, *Copepoda* n. sp.; PEARSE (156).

California, *Brachyura*, *Isopoda*; HOLMES (89).

e. *Neotropical Region.*

French Guiana, *Pseudothelphusa* n. sp.; NOBILI (143).

Amazons: *Cladocera* n. sp.; STINGELIN (213): *Cladocera* n. spp.,
Copepoda; STINGELIN (214): *Cladocera* and *Copepoda*; STINGELIN (216).

Lake Titicaca, *Amphipoda* n. sp.; CHEVREUX (40).

Chile, *Macrura*; PORTER (161).

f. *Australian Region. (Including Pacific Islands.)*

New Guinea, Dinawa, Owen Stanley Range, *Palæmon*; DE MAN (123).

Australia: Mt. Buffalo, Victoria, *Isopoda* and *Amphipoda*; SAYCE
(186); Melbourne, *Cladocera* n. sp.; SARS (182).

New Zealand: list of Crustacea; HUTTON (91): *Cladocera* n. spp.,
Copepoda n. spp.; SARS (185).

Marshall Is., *Decapoda* and *Isopoda*; DOFLEIN in SCHNEE (189).

Hawaiian Islands: *Cladocera*; STINGELIN (215): Honolulu, Molokai,
Laysan, *Phyllopoda*, *Copepoda* n. sp.; SARS (185).

Tahiti, *Palæmon*; DE MAN (123).

B. MARINE.

Distribution of Marine Crustacea; MCINTOSH (120): of deep-sea
Brachyura; DOFLEIN (53): of *Phyllocarida*, with new localities for many
spp.; THIELE (219): of *Cirripedia*; GRUVEL (71).

Distribution of larvæ of Crustacea by marine currents; GARDINER (64).

"Valdivia" Expedition Stations 74 and 236 [locality not stated], *Cope-*
poda n. spp.; STEUER (211): "Valdivia" Expedition [locality not stated,
probably Atlantic], *Amphipoda* n. sp.; WOLTERECK (244).

a. *Atlantic and Mediterranean.*

Atlantic: *Decapoda* (larvæ) n. sp.; ZIMMER (251): *Stomatopoda* (larvæ) n. spp.; JURICH (97): *Schizopoda*, *Copepoda*, *Cladocera*; CLEVE (43): Atlantic, *Hyperidea* n. sp.; WOLTERECK (245).

N. Atlantic and Faroe Channel, *Copepoda* n. spp.; WOLFENDEN (241): Faroe channel, *Isopoda* n. sp.; NORMAN (147).

Norway: *Copepoda*; SARS (181): *Copepoda* n. sp.; SARS (183).

Skagerak, *Amphipoda* n. sp.; SARS (184): Skagerak and Kosterfjord, *Macrura* n. spp.; TRYBOM (223).

North Sea and Baltic, Plankton Crustacea; ANON. (9).

British Seas: *Copepoda* and *Ostracoda* n. sp.; BRADY (23): *Schizopoda* n. sp.; KEEBLE & GAMBLE (101): *Isopoda*; NORMAN (147).

Scotland: *Cumacea*, *Isopoda*, *Amphipoda*, *Copepoda* n. spp.; SCOTT (191): Dornoch Firth, *Copepoda* n. sp.; SCOTT (192): Firths of Forth and Clyde, comparison of *Decapoda*, *Schizopoda* and *Copepoda*; SCOTT in LINDSAY (115): Firth of Clyde, *Decapoda*, *Schizopoda*, *Isopoda*, *Rhizocephala*; PATIENCE (152).

England: Yorkshire, *Decapoda*, *Schizopoda*, *Amphipoda*, *Isopoda*; PETCH (160): Yorkshire, *Amphipoda*; NORMAN (148): Thames Estuary, *Decapoda*; MURIE (141): Plymouth, Crustacea; MAR. BIOL. ASS. (125): Scilly Ids., Crustacea; BROWNE & VALLENTIN (26).

Ireland: Irish Sea, parasitic *Copepoda*; A. SCOTT (190): Larne Harbour, *Copepoda*; PEARSON (157): Sligo, *Decapoda*; RANKIN (164): Sligo, *Amphipoda*; PATTERSON (153).

Bay of Biscay: Crustacea; MONACO (135): *Decapoda*, *Schizopoda*, *Isopoda*, *Amphipoda*, *Copepoda*, *Ostracoda*; RICHARD (171): *Amphipoda* n. spp., *Cladocera*, *Cirripedia*; STEBBING & FOWLER (209): Vendée, *Copepoda* (? n. sp.); BAUDOUIN (13).

Portugal: *Copepoda*, *Cirripedia*, *Amphipoda*, *Tanaidacea*, *Isopoda* n. sp., *Stomatopoda*, *Schizopoda*, *Decapoda*; NOBRE (145) & (146): off coast of Portugal, *Isopoda* n. sp.; NORMAN (147).

Mediterranean: *Copepoda*, *Cladocera*, *Ostracoda*; CLEVE (43): *Decapoda*, *Schizopoda*, *Isopoda*, *Amphipoda*, *Ostracoda*, *Copepoda*, *Cladocera*; LO BIANCO (116): *Isopoda*; NORMAN (147): Messina, *Branchiura*, *Amphipoda*, *Isopoda*, *Schizopoda*, *Decapoda*; RIGGIO (177): Coast of Catania, *Decapoda*; MAGRI (121): Trieste, *Cirripedia* (larvæ) n. sp.; STEUER (212): Croatia, *Copepoda* n. sp.; MICULICH (132): Ponto-Aralo-Caspian region, Crustacea; SOWINSKY (199).

Canary Islands, Lanzarote, *Munidopsis polymorpha*; CALMAN (33).

W. Africa, *Brachyura* n. spp.; DOFLEIN (53).

Atlantic coast of N. America: *Alcippe* (*Cirripedia*); GENTHE (65): *Epicaridea* n. spp.; RICHARDSON (173).

Bermudas, *Isopoda* n. sp.; RICHARDSON (173).

Caribbean Sea, *Hyperidea* n. sp.; SENNA (195).

E. coast of S. America, *Epicaridea* n. spp.; RICHARDSON (173).

Falkland Ids., *Decapoda* and *Isopoda*; VALLENTIN (226).

b. *Indo-Pacific.*

E. Indian Seas, *Brachyura* n. spp.; DOFLEIN (53): Indian Ocean, *Stomatopoda* (larvæ) n. spp.; JURICH (97): *Decapoda* (larvæ) n. sp.; ZIMMER (251).

Red Sea, Gulf of Aden and Arabian Sea, *Copepoda* n. spp., *Cladocera*, *Ostracoda*; CLEVE (43): Red Sea, *Macrura* n. spp., *Stomatopoda* n. sp.; NOBILI (144).

E. Africa, *Brachyura* n. spp.; DOFLEIN (53): Zanzibar, *Stomatopoda* n. sp.; JURICH (97).

Agulhas Bank, *Brachyura* n. spp.; DOFLEIN in CHUN (41 A), DOFLEIN (53).

Maldivé Ids., *Hippidea* n. sp., *Thalassinidea* n. sp., *Loricata*; BORRA-DAILE (18): Maldivé and Laccadive Ids., *Isopoda* n. spp.; STEBBING (207).

India, distribution of sub-littoral genera of *Paguridae*; ALCOCK (2).

Ceylon: *Cunacea* n. spp.; CALMAN (34): *Caprellidae* n. sp.; MAYER (127): *Brachyura* n. sp., *Macrura*, *Tanaidacea* n. sp., *Isopoda* n. spp., *Amphipoda* n. spp.; STEBBING (208): *Amphipoda* n. spp.; WALKER (229).

Singapore, *Amphipoda* n. sp.; WALKER (229).

Near Jedan Ids. (S. of New Guinea), *Cirripedia* n. sp.; HOEK (85).

New South Wales, *Isopoda*; WHITELEGGE (236): South Australia, *Caridea* n. spp.; BAKER (12).

New Zealand: list of Crustacea; HUTTON (91): parasitic *Copepoda* n. spp.; HANSEN (79): *Cirripedia*, *Amphipoda*; STEAD (205): *Phyllocarida* n. spp.; THIELE (219): *Isopoda*; THOMSON (221).

Saghalien, *Caridea* n. sp.; BRAZHNIKOV (24).

Japan, *Isopoda* n. spp.; RICHARDSON (173).

Marshall Is., *Decapoda*; DOFLEIN in SCHNEE (189).

Samoa, *Hippidea* n. sp.; BENEDICT (14).

Gambier Ids., *Caridea*; COUTIÈRE (46).

N.W. America: *Decapoda* n. sp.; RATHBUN (165): *Amphipoda* n. spp.; HOLMES (87): *Isopoda* n. spp.; RICHARDSON (172): *Epicaridea* n. sp.; RICHARDSON (173).

California: *Hippidea* n. sp.; BENEDICT (14): *Isopoda* n. sp.; HOLMES (88): *Macrura* n. sp., *Amphipoda*, *Isopoda*; HOLMES (89).

W. coast of Centr. America, *Isopoda* n. spp.; RICHARDSON (173): Realejo, Nicaragua, *Brachyura* n. sp.; RATHBUN (167): Punta Arenas, Costa Rica, *Brachyura* n. sp.; RATHBUN (167).

Valparaiso, *Brachyura* n. sp.; RATHBUN (167).

c. *Arctic and Antarctic.*

Arctic *Schizopoda*, distrib. discussed; ZIMMER (250).

Arctic Ocean, *Amphipoda* n. spp., *Isopoda*; STEBBING (206).

Kerguelen, *Phyllocarida* n. sp.; THIELE (219).

2. GEOLOGICAL.

Post-tertiary, Celebes, *Brachyura* n. spp.; DE MAN (124): Sweden, *Ostracoda*; MUNTZE (139): Glacial beds, Lübeck, *Phyllopoda*, *Cladocera*, *Ostracoda*; RANGE (163).

Tertiary (?), Bouzigues, Hérault, *Isopoda* n. sp.; DOLLFUS (54): Tertiary, E. Greenland, *Macrura* n. sp., *Brachyura* n. sp.; RAVN (169): Australia, *Cirripedia*; DENNANT & KITSON (52): Upper Miocene, Haguineau, *Cirripedia*, *Brachyura*; COUFFON (45): Miocene, Kalksburg near Vienna, *Brachyura* n. sp.; TOULA (222): Maryland, *Ostracoda* n. spp.; ULRICH & BASSLER (225): Maryland, *Cyclometopa* and *Cirripedia*; MARTIN (126): Massachusetts, *Cirripedia*; CUSHMAN (49): Mediterranean stage, S. Russia, *Cirripedia*; MIKHAILOVSKY (133): Eocene, Peschici, Italy, *Cyclometopa* n. sp.; CHECCHIA-RISPOLI (39).

Cretaceous, Scarborough, *Ostracoda*, *Cirripedia*; FOX-STRANGWAYS (59): East Pondoland, S. Africa, *Ostracoda* n. spp.; CHAPMAN (36): Upper Cretaceous, Belfast, *Callianassa*; LAMPLUGH (110): Chalk, England, *Brachyura*, *Macrura*, *Cirripedia*, *Ostracoda*; JUKES BROWN (96): Surrey, *Cirripedia* and *Decapoda*; HOLMES (90): Greensand, Sainte Ménéhould, *Hoploparia*; COLLET (44).

Jurassic, Solnhofen Limestones, *Isopoda*, *Stomatopoda*, *Decapoda*, "bionomisch betrachtet"; WALTHER (230): Oolite, Scarborough, *Decapoda*,

Cirripedia; FOX-STRANGWAYS (59): Lower Oolite, Geraldton, W. Australia, *Ostracoda* n. spp.; CHAPMAN (37).

Palæozoic, Niagara Region, *Ostracoda* and *Phyllocarida*; GRABAU (67).

Carboniferous, Belfast, *Ostracoda*; LAMPLUGH (110): Coal Measures, Lancashire, Crustacea; BOLTON (16): Ohio, *Phyllopoda* n. sp., CLARKE (42).

Devonian, New York, *Phyllocarida* and *Phyllopoda*; CLARKE (42).

Silurian, Gothland, *Ostracoda*, *Phyllocarida*; MUNTHE (140): New York State, *Ostracoda* n. sp., *Cirripedia* n. sp.; RUEDEMANN (179): Salina, New York, *Phyllocarida* n. spp.; CLARKE (42): Silurian, Victoria, *Ostracoda* n. spp., *Phyllocarida* n. spp.; CHAPMAN (38).

Ordovician (?), Canada, *Ostracoda* n. sp.; JONES (93).

IV. SYSTEMATIC.†

[In addition to papers quoted below, see ANON. (9), †BOLTON (16), GARDINER (64), GUCCINI (76), HUTTON (91), LABBÉ (108), LANKESTER (111), MCINTOSH (120), MONACO (135), SELLIER (194), SKORIKOW (196), STAMM (204), WEIGELT (231), YAKHONTOV (246).]

A. MALACOSTRACA.

Classification of *Malacostraca*:

Series *Leptostraca*.

Division *Phyllocarida* (Order, *Nebaliacea* n. nom.).

Series *Eumalacostraca*.

Divisions *Syncarida* (Order, *Anaspidacea* nov.), *Peracarida* n. nom. (Orders, *Mysidacea*, *Cumacea*, *Tanaidacea*, *Isopoda*, *Amphipoda*), *Eucarida* n. nom. (Orders, *Euphausiacea*, *Decapoda*), *Hoplocarida* n. nom. (Order, *Stomatopoda*),

with discussion of characters and diagnoses of series and divisions;

CALMAN, Ann. Nat. Hist. (7) xiii, pp. 144–158.

Malacostraca divided into Legions *Leptostraca*, *Thoracostraca*, *Stomatopoda*, *Anomostraca* nov. (for *Anaspides* &c.), *Arthrostraca*; GROBBEN, Claus' Lehrbuch, pp. 431–468.

1. DECAPODA.

[See also ANDREWS (6), BROWNE & VALLENTIN (26), †FOX-STRANGWAYS (59), GADZIKIEWICZ (62), †HOLMES (90), KEEBLE & GAMBLE (102), KOBERT (104), LABBÉ (109), SCOTT in LINDSAY (115), LO BIANCO (116), LOŠKO (118), MAGRI (121), MAR. BIOL. ASS. (125), MEEK (130), MURIE (141), NOBRE (145 & 146), PATIENCE (152), PETCH (160), RANKIN (164), RICHARD (171), DOFLEIN in SCHNEE (189), SELLIER (193), VALLENTIN (226), †WALTHER (230).]

Decapoda, attachment of eggs to parent; WILLIAMSON, Rep. Fish. Board Scotland xxii, pt. iii, p. 116.

a. BRACHYURA.

[See also †COUFFON (45), †JUKES-BROWNE (96), †MARTIN (126).]

† This sign when prefixed to a quotation indicates a fossil form or forms. Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

OXYRHYNCHA.

- Anasimus rostratus*, p. 171, pl. x, fig. 4; RATHBUN, Harriman Alaska Exped. x.
- Cyrtomaia goodridgei*, pl. lix, fig. 1-1c; ALCOCK & MCARDLE, Illustr. Zool. Investigator: *C. suhmi*, p. 53, subsp. *typica*, p. 54, pl. xix, figg. 1 & 2, subsp. *platyceros* **n. subsp.**, p. 55, pl. xix, fig. 3, pl. xl, figg. 1-7, pl. xliii, fig. 4, pl. xlv, figg. 1-5; DOFLEIN, Brachyura "Valdivia."
- Daldorfia* **n. nom.** for *Parthenope* Leach, non Weber, type *horrida*, p. 171; RATHBUN, P. Soc. Washington xvii.
- Dasygyius tuberculatus*, p. 172, pl. x, figg. 3 & 3a, and text-fig. 92; RATHBUN, Harriman Alaska Exped. x.
- Erileptus spinosus*, p. 171, pl. x, fig. 1; RATHBUN, t. c.
- Hyastenus brevirostris*, S. of Sumatra, 614 metres, p. 85, pl. xxvii, figg. 13 & 14; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- Inachus antarcticus*, Agulhas Bank, 155 metres, p. 74, pl. xxviii, figg. 2 & 3; DOFLEIN, t. c. **n. sp.**
- Kempferia* [= *Macrocheira*] *kempferi*, size; ANON., Amer. Mus. J., pp. 25 & 60.
- Lambrus* synonym of *Parthenope*, p. 171; RATHBUN, P. Soc. Washington xvii.
- L. macrocheles*, p. 87, pl. xxxii, fig. 5; DOFLEIN, Brachyura "Valdivia."
- Mamaia* **n. nom.** for [*Maia*] *quinado*, p. 2; STEBBING, Spolia Zeylan. ii.
- Oregonia bifurca*, p. 171, pl. vi, fig. 5; RATHBUN, Harriman Alaska Exped. x.
- Parthenope* Weber, 1795 (= *Lambrus* Leach, 1815), type *longimana* Linn., p. 170; RATHBUN, P. Soc. Washington xvii (see *Daldorfia*).
- Physachæus ctenurus*, p. 71, pl. xxiv, figg. 1-4, pl. xlii, figg. 1-7, pl. xlviii, DOFLEIN, Brachyura "Valdivia."
- Platymaia wyville-thomsoni*, p. 59, pls. ii, xx, xxii, xxiii, xxxix, xliii, figg. 5 & 6, pl. l, figg. 2, 5 & 6, text-figg. 2-5; DOFLEIN, t. c.
- Pleistacantha moseleyi*, p. 76, pl. xxiv, figg. 5 & 6, pls. xxv & xxvi; DOFLEIN, t. c.
- Podochela hemphillii*, p. 171, pl. x, fig. 2; RATHBUN, Harriman Alaska Exped. x.
- Pugettia dalli*, p. 173, pl. ii, figg. 1 & 1a; RATHBUN, t. c.
- Scyramathia hertwigi*, Agulhas Bank, fig. on p. 497; DOFLEIN in CHUN, "Aus den Tiefen des Weltmeeres," 1900, **n. sp.**
- S. hertwigi*, p. 81, pl. xxvii, figg. 1-7, pl. xxviii, fig. 1, *pulchra*, p. 84, pl. xxvii, fig. 12, *rivers-andersoni*, p. 84, pl. xxvii, figg. 8-11, *globulifera*, p. 85; DOFLEIN, Brachyura "Valdivia."
- Stenorhynchus falcifer*, p. 70, text-fig. 6; DOFLEIN, t. c.

CYCLOMETOPA.

- Actæa hirsutissima*, p. 102, pl. xxxii, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- Alpheus* Weber, 1795, synonym of *Cancer*, p. 170; RATHBUN, P. Soc. Washington xvii.
- Benthochascon hemingi*, p. 90, pl. xxix, figg. 1 & 2, pl. xli, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- Callinectes hastatus*, life history, fishery &c.; PAULMIER, Rep. N. York Mus. lv, pp. 129-138.
- Cancer amphicetus*, p. 175, pl. vi, fig. 3, *anthonyi*, p. 176, pl. vi, fig. 2, *jordani*, p. 176, pl. vi, fig. 4, *oregonensis*, p. 178, pl. vii, fig. 1; RATHBUN, Harriman Alaska Exped. x: *C. pagurus*, abnormal chelæ, p. 195;

- SCHERREN, P. Zool. Soc. London 1903, ii: *C. pagurus*, breeding habits, post-larval development, rate of growth &c.; WILLIAMSON, Rep. Fish. Board Scotland xxii, pl. iii, pp. 100-140, pls. i-v: *C. pagurus*, ecdysis; WITTEN, Rep. Coll. Physic. Edinburgh ix, No. 19, 7 pp., 9 text-figg.
- +*C. bittneri*, Miocene, Vienna, p. 161, text-figg. 1-5; TOULA, Jahrb. geol. Reichsanst. liv, **n. sp.**
- Carcinus maenas*, microsporidian parasite; PÉREZ, C.R. Soc. Biol. lvii, pp. 214 & 215: proportions of sexes; PUNNETT, P. Cambridge Soc. xii (4), pp. 283-296: breeding habits, post-larval development &c.; WILLIAMSON, Rep. Fish. Board Scotland xxii, pt. iii, pp. 100-140, pls. i-v.
- Corystes* [see *Euryala*].
- Domecia glabra*, pl. liv, figg. 3 & 3a; ALCOCK & MCARDLE, Illustr. Zool. Investigator.
- Elliptodactylus* **n. g.** (*Portunidae*), p. 93, *rugosus*, mouth of Congo, p. 94, pl. xxx, figg. 1-3, pl. xxxii, fig. 7, text-figg. 7 & 8; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- Euryala* Weber (= *Corystes* Latr.), type *cassivelaunus*, p. 171; RATHBUN, P. Soc. Washington xvii.
- Geryon paulensis*, p. 531; DOFLEIN in CHUN, "Aus den Tiefen des Weltmeeres," ii Aufl. 1903, **n. sp.**
- G. affinis*, p. 106, many figg., *paulensis*, p. 112, pl. xxxi, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- +*Harpactocarcinus punctulatus*, p. 50, pl. i, figg. 1-3; CHECCHIA-RISPOLI, Boll. Soc. zool. Ital. (2) v.
- Lioxantho punctatus*, p. 256, pl. x, fig. 3; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Lophopanopeus bellus*, p. 180, *frontalis*, p. 181, pl. vii, fig. 8, *heathii*, p. 182, pl. vii, fig. 9, *leucomanus*, p. 182, *lockingtoni*, p. 183, pl. vii, fig. 7, *diegensis*, p. 184, pl. ix, fig. 3; RATHBUN, Harriman Alaska Exped. x.
- L. nicaraguensis*, Realejo, Nicaragua, p. 162; RATHBUN, P. Soc. Washington xvii, **n. sp.**
- Lybia*, H. M.-E., revived for *Melia* Latr., non Billberg; RATHBUN, t. c. p. 102.
- Melia* [see *Lybia*].
- +*Metopoxantho* **n. g.** (*Xanthidae*), p. 255, *martini*, post-tertiary, Celebes, p. 257, pl. ix, fig. 1; DE MAN, Samm. geol. Mus. Leiden (1) vii, **n. sp.**
- Ovalipes trimaculatus*, p. 92, pl. xxxii, fig. 6; DOFLEIN, Brachyura "Valdivia."
- Parathelphusa sinensis*, p. 316, pl. xvii, figg. 1 & 2, var.?, p. 318, pl. xvii, fig. 3; DE MAN, Mission Pavie Indo-Chine iii.
- P. paviei* Laos, p. 320, pl. xvii, fig. 4; DE MAN, t. c. **n. sp.**
- Pilumnus verrucosipes*, p. 100, pl. xxxii, figg. 3 & 4; DOFLEIN, Brachyura "Valdivia": *P. spinohirsutus*, p. 185, pl. vii, fig. 2; RATHBUN, Harriman Alaska Exped. x.
- +*Podophthalmus vigil*, post-tertiary, Celebes, p. 274; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Potamon*, key to spp. from Celebes, p. 567, *celebensis* var. *lokaensis*, p. 561, var. *linduensis*, **n. var.**, p. 562, fig. A, var. *possoensis*, **n. var.**, p. 564, fig. B; ROUX, Rev. Suisse Zool. xii.
- P. (Potamon) cochinchinense*, Cochin-China, p. 323, pl. xviii, fig. 5; DE MAN, Mission Pavie Indo-Chine iii, **n. sp.**
- Pseudothelphusa geayi*, French Guiana, p. 127, text-fig. 1; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Trichopeltarium alcocki*, p. 531; DOFLEIN in CHUN, "Aus den Tiefen des Weltmeeres," ii Aufl. 1903, **n. sp.**

- T. alcocki*, p. 88, pl. xxviii, figg. 4 & 5; DOFLEIN, *Brachyura* "Valdivia."
Xantho bidentatus, p. 256, pl. ix, fig. 2, *impressus*, p. 256, pl. x, fig. 4;
 DE MAN, *Samm. geol. Mus. Leiden* (1) vii.

CATOMETOPA.

- Baruna* **n. g.** (*Grapsidae*), p. 3, *socialis*, Ceylon, p. 3, pl. ia; STEBBING, *Spolia Zeylan.* ii, **n. sp.**
Carcinoplax longimanus, p. 114, subsp. *indicus*, **n. subsp.**, p. 114, pl. xxxv, figg. 1 & 2, subsp. *japonicus*, p. 115, pl. xxxvi; DOFLEIN, *Brachyura* "Valdivia."
Ceratoplax hispida, pl. lxi, fig. 4; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Chasmocarcinops gelasmoides, pl. lxii, figg. 2, 2a, 3, 3a; ALCOCK & MCARDLE, t. c.
Clistostoma dotilliforme, pl. lxiv, figg. 1 & 1a; ALCOCK & MCARDLE, t. c.
 †*Celoma bicarinatum*, Tertiary, East Greenland, p. 120, pl. iv, fig. 6, pl. v, figg. 1-6; RAVN, *Medd. Gronland* xxix (1), **n. sp.**
Cryptophrys concharum, p. 188, pl. vii, fig. 6, & text-fig. 94; RATHBUN, *Harriman Alaska Exped.* x.
Dotilla affinis, pl. lxiii, figg. 1-1b, *clepsydrodactylus*, figg. 2 & 2a, *blanfordi*, figg. 3 & 3a; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Elamena sindensis, pl. lxiv, fig. 4; ALCOCK & MCARDLE, t. c.
Hexaplax **n. g.** (*Gonoplacidae*), p. 122, *megalops*, off Sumatra, 470 metres, p. 122, pl. xxxi, figg. 3 & 4, pl. l, fig. 7; DOFLEIN, *Brachyura* "Valdivia," **n. sp.**
Hymenicus wood-masoni, pl. lxiv, fig. 3, *inachoides*, pl. lxv, fig. 1; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Lambdophallus scarpes, pl. lxii, figg. 1-1b; ALCOCK & MCARDLE, t. c.
Libystes edwardsi, pl. lxi, fig. 1, *alphonsi*, fig. 2; ALCOCK & MCARDLE, t. c.
 †*Macrophthalmus granulatus*, post-tertiary, Celebes, p. 266, pl. x, fig. 5; DE MAN, *Samm. geol. Mus. Leiden* (1) vii, **n. sp.**
Notonyx vitreus, pl. lxi, fig. 3; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Opisthopus transversus, p. 188, pl. ix, fig. 2, text-fig. 95; RATHBUN, *Harriman Alaska Exped.* x.
Palicus serripes, pl. lxvii, fig. 1, *investigatoris*, fig. 2, *wood-masoni*, fig. 3; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Pilumnoplax americana, p. 120, pl. xxxv, figg. 3 & 4; DOFLEIN, *Brachyura* "Valdivia."
Pinnaeodes meinerti, Valparaiso, p. 162; RATHBUN, *P. Soc. Washington* xvii, **n. sp.**
Pinnixa occidentalis, p. 187, pl. vii, fig. 4, pl. ix, figg. 6 & 6a, *californiensis*, p. 187, pl. vii, fig. 3; RATHBUN, *Harriman Alaska Exped.* x.
Pinnotheres mactricola, pl. lxii, figg. 4, 5-5b, *purpureus*, figg. 6-6b; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*: *Pinnotheres* sp., p. 124, pl. xxxvii, figg. 3 & 4, text-fig. 10; DOFLEIN, *Brachyura* "Valdivia."
Pinnotheres villosissimus, in a Holothurian, Padang, p. 125, pl. xxxvii, figg. 6 & 7, text-fig. 11, DOFLEIN, t. c. **n. sp.**
Psopheticus insignis, pl. liv, fig. 2; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*: *P. stridulans*, p. 118, pl. xxx, fig. 4; DOFLEIN, *Brachyura* "Valdivia."
Ptychognathus onyx, pl. lxv, figg. 2 & 2a, *andamanica*, figg. 3 & 3a; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Pyxidognathus fluviatilis, pl. lxvi, figg. 3 & 3a; ALCOCK & MCARDLE, t. c.
Raphonotus lowei, p. 186, text-fig. 93; RATHBUN, *Harriman Alaska Exped.* x.

- Retropluma chuni*, off Sumatra, 614 metres, p. 131, pl. xxxvii, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- Scleroplax granulata*, p. 188, pl. vii, fig. 5; RATHBUN, Harriman Alaska Exped. x.
- Scopimera investigatoris*, pl. lxiii, figg. 4-4b, *crabricauda*, figg. 5-5b; ALCOCK & MCARDLE, Illustr. Zool. Investigator.
- Sesarma lanatum*, pl. lxv, figg. 4 & 4a, *jinni*, pl. lxvi, fig. 1, *latifemur*, fig. 2; ALCOCK & MCARDLE, t. c.
- Speocarcinus californiensis*, p. 190, pl. ix, fig. 1; RATHBUN, Harriman Alaska Exped. x.
- Tylodiplax indica*, pl. lxiv, figg. 2-2c; ALCOCK & MCARDLE, Illustr. Zool. Investigator.
- Uca* [= *Gelasimus*] *brevifrons*, p. 308, pl. xxxv, figg. 1-5; HOLMES, P. Calif. Ac. (3) Zool. iii.
- U. cerstedii*, Costa Rica, p. 161; RATHBUN, P. Soc. Washington xvii, **n. sp.**

OXYSTOMATA.

- Atlantotlos n. g.* (*Leucosiidae*), p. 49, *rhombifer*, mouth of Congo, p. 50, pl. xv, figg. 7 & 8; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- †*Calappa lophos*, post-tertiary, Celebes, p. 277; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Clythrocerus planus*, p. 168, pl. ix, fig. 4; RATHBUN, Harriman Alaska Exped. x.
- Cosmonotus grayi*, p. 51, pl. xviii, figg. 5-8; DOFLEIN, Brachyura "Valdivia."
- Cyclodorippe uncifera*, p. 34, pl. xii, figg. 4-7, pl. xxxviii, figg. 6 & 7; DOFLEIN, t. c.
- Cymonomus granulatus*, p. 33, pl. xi, fig. 5, pl. xii, figg. 1-3; DOFLEIN, t. c.
- Dorippe lanata*, p. 32; DOFLEIN, t. c.
- Ebalia* (*Phlyxia*) *atlantica*, p. 46, pl. xvi, fig. 4; DOFLEIN, t. c.
- E. salamensis*, E. Africa, 400 metres, p. 47, pl. xvi, figg. 1-3; DOFLEIN, t. c. **n. sp.**
- Ethusa hirsuta*, pl. lix, figg. 2 & 2a; ALCOCK & MCARDLE, Illustr. Zool. Investigator: *E. andamanica*, p. 27, pl. xiii, figg. 7 & 8, *mascarone*, p. 29, (*Ethusina*) *abyssicola*, p. 31, pl. xiii, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- E. zurstrasseni*, off E. Africa, 977 metres, p. 28, pl. xiii, figg. 3 & 4, *somalica*, off E. Africa, 1362 metres, p. 30, pl. xiii, figg. 5 & 6; DOFLEIN, t. c. **n. spp.**
- Mursia cristimana*, p. 38, pl. xvi, figg. 5-12, pl. xviii, fig. 1, *armata typica*, p. 40, pl. xvii, fig. 1, pl. xviii, fig. 2, *a. curtispina*, p. 40, pl. xvii, fig. 2, pl. xviii, fig. 3, *a. hawaiiensis*, p. 41, *a. bicristimana*, p. 41, pl. xvii, fig. 3, pl. xviii, fig. 4; DOFLEIN, t. c.
- †*Myra* sp., post-tertiary, Celebes, p. 276; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Parilia alcocki*, p. 44, pl. xiv, figg. 8 & 9; DOFLEIN, Brachyura "Valdivia."
- Pariphiculus coronatus*, p. 41, pl. xiv, fig. 7; DOFLEIN, t. c.
- Philyra punctata*, p. 45, pl. xv, figg. 1-4; DOFLEIN, t. c.
- P. laminata*, off Sumatra, 141 metres, p. 46, pl. xv, figg. 5 & 6; DOFLEIN, t. c. **n. sp.**
- Randallia pustulosa*, p. 42, pl. xiv, figg. 1-6; DOFLEIN, t. c.

DROMIACEA.

- Dromia bicornis*, p. 8, pl. vi, figg. 3-5, *spinosa*, p. 9, pl. vi, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."

- D. atlantica*, mouth of Congo, p. 10, pl. vii, figg. 3 & 4; DOFLEIN, t. c. **n. sp.**
Homola barbata orientalis, p. 14, pl. v, figg. 4 & 5, (*Paromola profundorum*, p. 16, pl. vii, figg. 1 & 2; DOFLEIN, t. c.
Homolochunia, **n. g.** (*Latreillide*), p. 21, *valdivia*, off E. Africa, 693-977 metres, p. 22, pl. i, figg. 1 & 2, pl. ix, figg. 1-8, pl. x, figg. 1 & 2, pl. xliii, fig. 1; DOFLEIN, t. c. **n. sp.**
Homolodromia bouvieri, off E. Africa, 863 metres, p. 4, pl. v, figg. 1-3, pl. xxxviii, figg. 9-13, pl. xliii, fig. 3, text-fig. 1; DOFLEIN, t. c. **n. sp.**
Homologenus braueri, off E. Africa, 1242 metres, p. 18, pl. xi, figg. 3 & 4; DOFLEIN, t. c. **n. sp.**
Hypsophrys longipes, p. 17, pl. xi, figg. 1 & 2; DOFLEIN, t. c.
Pseudodromia latens, p. 12, pl. viii, figg. 1-6; DOFLEIN, t. c.

b. ANOMURA.

GALATHEIDEA.

- Bathankyristes spinosus*, pl. lv, fig. 2, *levis*, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Galacantha areolata, pl. lv, figg. 5 & 5a; ALCOCK & McARDLE, t. c.
Munidopsis polymorpha, remarkable habitat; CALMAN, Ann. Nat. Hist. (7) xiv, pp. 213-218, 1 text-fig.: *M. wardeni*, pl. lv, fig. 1, *hemingi*, pl. lv, fig. 4, *M. (Orophorhynchus) granosa*, pl. lvi, fig. 1, *edwardsii*, fig. 2, (*Elasmonotus*) *sinclairi*, fig. 4, *M. orcina*, fig. 5, (*Orophorhynchus*) *ceratophthalmus*, pl. lvii, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Pachycheles rudis, p. 168, pl. vi, fig. 6; RATHBUN, Harriman Alaska Exped. x.
Ptychogaster investigatoris, pl. lviii, fig. 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Uroptychus nigricapillis, pl. lvi, fig. 3, *nanophyes*, pl. lvii, figg. 1, 1a; ALCOCK & McARDLE, t. c.

PAGURIDEA.

[See also ALCOCK (2).]

- Birgus latro*, characters and habits; NAPOLI, Boll. Soc. zool. Ital. xiii, pp. 193-197.
Chlænopagurus andersoni, pls. liii & liv, figg. 1 & 1a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
Eupagurus bernhardus, correlation of sensations; BOHN, C.R. Ac. Sci. cxxxviii, p. 113: *E. longicarpus*, psychological experiments; SPAULDING, Biol. Bull. vi, p. 325 and Journ. Compar. Neurology and Psychology xiv, pp. 49-61.
Pagurus [see also *Eupagurus*] *capillatus*, p. 157, pl. iv, fig. 3, *brandtii*, p. 157, pl. iv, fig. 4, *dalli*, p. 158, pl. iv, fig. 1, *rathbuni*, p. 158, pl. iv, fig. 2, *tanneri*, p. 158, pl. iv, fig. 7, *confragosus*, p. 158, pl. iv, fig. 8, *cornutus*, p. 158, pl. v, fig. 3, *townsendi*, p. 158, pl. iv, fig. 5, *beringanus*, p. 159, pl. v, fig. 5, *undosus*, p. 159, pl. iv, fig. 6, *kennerlyi*, p. 159, pl. v, fig. 4, *setosus*, p. 159, pl. v, fig. 1, *samuelsi*, p. 160, pl. v, fig. 7, *granosimanus*, p. 160, pl. v, fig. 8, *hemphillii*, p. 160, pl. v, fig. 9, *munitus*, p. 161, pl. v, fig. 2, *gilli*, p. 161, pl. v, fig. 10; RATHBUN, Harriman Alaska Exped. x.
Parapagurus mertensii, p. 162, pl. v, fig. 6; RATHBUN, t. c.
Placetron wosnessenskii, p. 163, pl. vi, fig. 1; RATHBUN, t. c.

HIPPIDEA.

Key to families, p. 751 ; BORRADAILE, Fauna Maldive ii.

Albunea gibbesii, p. 625, figg. 3 & 4, *oxyophthalma*, p. 625, fig. 5 ; BENEDICT, P. U. S. Mus. xxvii.

A. elioti, Samoa, p. 623, fig. 2 ; BENEDICT, t. c. **n. sp.**

Idotea Weber, 1795, type *emerita* Fabr. (syn. of *Emerita* Gronovius, 1764), p. 171 ; RATHBUN, P. Soc. Washington xvii.

Lophomastix **n. g.** (*Albuneidae*) p. 621, *diomedea*, off California, p. 621, fig. 1 ; BENEDICT, P. U. S. Mus. xxvii, **n. sp.**

Remipes granulatus, Maldive Ids., p. 751, pl. lviii, fig. 1 ; BORRADAILE, Fauna Maldive ii, **n. sp.**

c. MACRURA.

[See also †JUKES-BROWNE (96), RICHET (176).]

NEPHROPSIDEA.

The Crayfish [genus and species not stated] regeneration of first leg ; REED, Arch. Entwicklmech. xviii, pp. 307–316, pls. xvii & xviii, 3 text-figg.

Astacus fluviatilis: guide to dissection ; ANGLAS, L'Écrevisse : structure and physiology of digestive apparatus ; JORDAN, Biol. Centrbl. xxiv, pp. 321–332, 4 text-figg. and Arch. ges. Physiol. ci, pp. 263–310, pl. vii, 6 text-figg.: rudimentary gill ; LANKESTER, Nature lxi, p. 270 ; MOSELEY, Quart. J. Micr. Sci. xlviii (3), pp. 359–366, pls. xxiii & xxiv : *A. fluviatilis* var. *torrentium*, colour-variety, p. 254 ; BOUVIER, Bull. Soc. ent. France 1904 : *A. torrentium*, bionomics and physiology ; LATTE, Nat. Hist. Common Animals, pp. 48–70.

Astacus [*Homarus*] *gammarus*, abnormal chelæ, p. 195 ; SCHERREN, P. Zool. Soc. London 1903, ii.

Cambarus affinis, breeding habits, young stages, &c. ; ANDREWS, Amer. Natural. xxxviii, pp. 165–206, 10 text-figg. : *C. bartoni*, abnormal leg ; ANDREWS, Biol. Bull. vi, p. 75, 5 text-figg. : *C.* lists of spp., distrib. ecology, &c. ; HARRIS, Kansas Univ. Sci. Bull. ii (3), pp. 51–187 : *C. uhleri*, habits ; HAY, P. Soc. Washington xvii, p. 167 : *C. viridis*, copulatory appendages ; MOENHKAUS, Indiana Univ. Bull. i, pp. 17 & 18, 2 figg. : *C. affinis*, habit formation ; YERKES & HUGGINS, Harvard Psychological Studies i, pp. 565–577, 4 figg.

Homarus [see also *Astacus*] *vulgaris*, hatching ; HERDMAN, Nature lxx, p. 296 : maturation divisions in testis ; LABBÉ, C.R. Ac. Sci. cxxxviii, pp. 96–99.

†*Hoploparia granulosa*, p. 32, pl. ii, fig. 1 ; COLLET, Bull. Soc. Reims xii.

†*H. groenlandica*, Tertiary, East Greenland, p. 115, pl. iv, figg. 1 & 2 ; RAVN, Medd. Gronland xxix (1), **n. sp.**

Nephrops norvegicus, variation of ♂ gen. apertures, and proportions of sexes ; MCINTOSH, P. Cambridge Soc. xii, pp. 441–444 : general account of structure ; MEEK, The Norway Lobster, 1903.

Nephropsis ensirostris, pl. lviii, figg. 1, 1a ; ALCOCK & MCARDLE, Illustr. Zool. Investigator.

Parastacus hassleri, p. 256, text-figg. 24 & 25, *agassizii*, p. 258, pl. ix ; PORTER, Revist. chilena viii.

Phoberus cæcus var. *tenuimanus*, pl. lx ; ALCOCK & MCARDLE, Illustr. Zool. Investigator.

ERYONIDEA.

Eryonicus indicus, pl. 1, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Willemoesia indica, pl. lvii, figg. 5, 5a; ALCOCK & McARDLE, t. c.

LORICATA.

Palinurus vulgaris, eye replaced by "antenna"; ARIOLA, Arch. Entwick-mech. xviii, pp. 248-252, pl. xiv: histology of alimentary system; GUIEYSSE, Bull. Soc. Philom. (9) vi, pp. 117-128, 3 text-figg.
Scyllarus martensi var., p. 754, pl. lviii, fig. 4; BORRADAILE, Fauna Maldive ii.

THALASSINIDEA.

Axiopsis aethiopica, Red Sea, p. 235; NOBILI, Bull. Mus. Paris x, **n. sp.**
Axius spinulicauda, p. 149, text-fig. 90; RATHBUN, Harriman Alaska Exped. x.
Calastopus longispinis, pl. lvii, figg. 2 & 2a; ALCOCK & McARDLE, Illustr. Zool. Investigator: *C. investigatoris*, p. 151, *quinqseriesiatus*, p. 151, text-fig. 91; RATHBUN, Harriman Alaska Exped. x.
Calocaris alcocki, pl. 1, figg. 4 & 4a; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Callianassa (Callichirus) longiventris (?), p. 752, pl. lviii, fig. 2; BORRADAILE, Fauna Maldive ii: *C.* key to N.W. American spp., p. 153, *goniophthalma*, p. 154, pl. viii; RATHBUN, Harriman Alaska Exped. x. +*C.*, Upper Cretaceous, Belfast, p. 35; LAMPLUGH and others, Geol. Belfast, Mem. Geol. Survey 1904.
C. (Trypaea) maldivensis, Maldive Ids., p. 753, pl. lviii, fig. 3; BORRADAILE, Fauna Maldive ii: *C. (Cheramus) jousseaumei* and *calmani*, p. 236, *(Trypaea) bouvieri*, p. 236, *(Callichirus) rosæ* and *coutieri*, p. 237, Red Sea; NOBILI, Bull. Mus. Paris x: **n. spp.**
Euconaxius [apparently for *Eiconaxius*] *coronatus*, Skager Rack, p. 384, pl. xx, figg. 1-10, 13 & 14, pl. xxi, figg. 1-8, *crassipes*, Kosterfjord, p. 390, pl. xx, figg. 11 & 12; TRYBOM, Arkiv. Zool. i, **n. spp.**
Gebicula exigua, pl. lvii, fig. 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Iconaxiopsis andamanensis, pl. lviii, figg. 2 & 2a; ALCOCK & McARDLE, t. c.
Lepidophthalmus **n. g.** (*Callianassidæ*), p. 310, *eiseni*, Lower California, p. 311, pl. xxxv, figg. 6-13; HOLMES, P. Calif. Ac. (3), Zool. iii, **n. sp.**
Upogebia osiridis, p. 235, (*Gebiopsis*) *rhadames*, p. 235, *octoceras*, p. 236, Red Sea; NOBILI, Bull. Mus. Paris x, **n. spp.**

CARIDEA.

Aegeon affine, pl. li, figg. 3, 3a, & 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Alope australis, S. Australia, p. 154, pl. xxx, figg. 1-7; BAKER, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
Alpheus Weber, 1795, synonym of *Cancer*, replaced by *Crangon* Weber, p. 170; RATHBUN, P. Soc. Washington xvii: *A.* regeneration, p. 319; BRUES, Biol. Bull. vi: *A. heterochelis*, p. 5; STEBBING, Spolia Zeylan. ii.

- Angasia elongata*, p. 147, pl. xxvii, figg. 1-4, *kimberi*, p. 149, pl. xxvii, fig. 5, *robusta*, p. 150, pl. xxviii, figg. 1-8, *tomentosa*, p. 152, pl. xxix, figg. 1-4, South Australia; BAKER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Arete dorsalis* var. *pacificus*, commensalism with *Heterocentrotus mammillatus*; COUTIÈRE, Bull. Mus. Paris x, pp. 58-60.
- Atya serrata*, mutation *alluaudi* **nov.** Madagascar, p. 448 [see also *Ortmannia*]; BOUVIER, C.R. Ac. Sci. cxxxviii.
- A. intermedia*, W. Africa, p. 137, *africana*, Ogowé, p. 138; BOUVIER, Bull. Mus. Paris x, **n. spp.**
- Atyaephyra desmarestii*, variation statistically examined; BROŽEK, SB. Bohmisch. Ges. 1904, xi.
- Betæus harrimani*, Sitka, p. 108, text-fig. 49; RATHBUN, Harriman Alaska Exped. x, **n. sp.**
- Birulia* **n. g.** (*Hippolytidae*) p. xlv, *sachalinensis*, Saghalien, p. xlv [in Russian]; BRAZHNIKOV, Annuaire Mus. St. Petersb. viii, **n. sp.**
- Caridina togoensis* var. *decorsei* **n. var.** p. 131; BOUVIER, Bull. Mus. Paris x: *C.*, key to spp. from Celebes, p. 551, *pareparensis* var. *parvidentata* **n. var.**, Celebes, p. 545, pl. ix, figg. 5-7; ROUX, Rev. Suisse Zool. xii.
- C. simoni*, Ceylon, p. 131, *syriaca*, Syria, p. 132, *grandidieri*, Madagascar, p. 133, *davidi*, China, p. 133, *apiocheles*, and mutation *edwardsi*, Seychelles(?), p. 134, *madagascariensis*, Madagascar, p. 134, *edulis*, Madagascar, p. 135, *similis*, Seychelles, p. 135; BOUVIER, Bull. Mus. Paris x: *C. linduensis*, p. 541, pl. ix, figg. 1-4, *opuensis*, p. 547, pl. ix, figg. 8-10, Celebes; ROUX, Rev. Suisse Zool. xii: **n. spp.**
- Coralliocaris hecate*, p. 232, (*Onycocaris*) *australica* and *rhodope*, p. 232, Red Sea; NOBILI, Bull. Mus. Paris x, **n. spp.**
- Coralliocrangon* **n. g.** (*Crangonidae*) *perrieri*, Red Sea, p. 234; NOBILI, t. c. **n. sp.**
- Crago* Lamk. (= *Crangon* Fabr. 1798, non Weber, 1795), type *vulgaris*, p. 170; RATHBUN, P. Soc. Washington xvii.
- Crangon* Weber, 1795 (= *Alpheus* Fabr. 1798), type *malabaricus*, p. 170; RATHBUN, t. c. [See *Crago*.]
- Crangon vulgaris*, fishery problems; HERDMAN, P. Liverp. biol. Soc. xviii, pp. 157-167: *C. lockingtonii* **n. nom.** for *C. munitus* Lockington, non Dana, p. 312, pl. xxxv, figg. 14-16; HOLMES, P. Calif. Ac. (3) Zool. iii: *C. spp.*, colour physiology; KEEBLE & GAMBLE, Phil. Trans. B, excvi, pp. 295-388: *C.*, key to N.W. American spp., p. 111, *nigricaruda*, p. 112, fig. 50, *nigromaculata*, p. 114, fig. 51, *alaskensis*, p. 114, fig. 52 & 53, subsp. *elongata*, p. 115, fig. 54, *septemspinosa*, p. 116, fig. 55, *alba*, p. 117, figg. 56 & 57, *holmesi*, p. 118, fig. 58, *stylirostris*, p. 118, fig. 59, *dalli*, p. 119, fig. 60, *franciscorum*, p. 120, fig. 61, subsp. *angustimana*, p. 121, figg. 62 & 63, *intermedia*, p. 122, *communis*, p. 123, fig. 64, *resima*, p. 124, fig. 65, *abyssorum*, p. 125, fig. 66, *munita*, p. 127, fig. 67, *aclivis*, p. 129, fig. 68, *variabilis*, p. 129, fig. 69, *spinossima*, p. 130, fig. 70, *spinirostris*, p. 131, fig. 71, *munitella*, p. 132; RATHBUN, Harriman Alaska Exped. x.
- Ephyrina hoskynii*, pl. lii, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Heptacarpus* [see *Spirontocaris*].
- Heterocarpus tricarinatus*, pl. li, fig. 1, *wood-masoni*, fig. 2; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Hippolysmata multiscissa*, Red Sea, p. 231; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Hippolyte*, spp., colour physiology; KEEBLE & GAMBLE, Phil. Trans. B, excvi, pp. 295-388.
- Hymenodora frontalis*, p. 28, fig. 8; RATHBUN, Harriman Alaska Exped. x.

- Latreutes pygmaeus* and *gravieri*, Red Sea, p. 230; NOBILI, Bull. Mus. Paris x, **n. spp.**
- Nectocrangon* *lar*, p. 137, text-figg. 74 & 75, *dentata*, p. 138, text-figg. 76 & 77, *ovifer*, p. 139, text-figg. 78 & 79, *californiensis*, p. 140, text-figg. 80 & 81, *alaskensis*, p. 141, text-figg. 82 & 83, *crassa*, p. 142, text-figg. 84 & 85, *levior*, p. 143, text-figg. 86 & 87; RATHBUN, Harriman Alaska Exped. x.
- Onyccocaris* **n. subg.** of *Coralliocaris* (q.v.), p. 232; NOBILI, Bull. Mus. Paris x.
- Ortmannia*, spp. except *O. mexicana* are mutations of spp. of *Atya*; BOUVIER, C.R. Ac. Sci. cxxxviii, pp. 446-449.
- Palæmon* [= *Leander*] spp., colour physiology; KEEBLE & GAMBLE, Phil. Trans. B, xcvi, pp. pp. 295-388.
- Palæmon* (*Eupalæmon*) *lar* var. *spectabilis*, p. 291, pl. xviii, fig. 1, (*Parapalæmon*?) *asperulus*, p. 293, pl. xviii, figg. 2-8, (*Macrobrachium*) *latimanus*, p. 296, pl. xviii, figg. 9-12, (*Eupalæmon*) *macrobrachion*, p. 299, pls. xviii & xix, figg. 13-29, (*Eupalæmon*) *foai*, p. 306, pl. xix, figg. 30-37, (*Macrobrachium*) *jamaicensis* var. *vollenhovenii*, p. 309, pls. xix & xx, figg. 38-53, (*Macrobrachium*) *olfersii*, p. 314, pl. xx, figg. 54-74, (*Macrobrachium*) sp., p. 319, pl. xx, figg. 75-80; DE MAN, Tr. Linn. Soc. London (2) Zool. ix.
- Palemonella biunguiculata* and *aberrans*, Red Sea, p. 233; NOBILI, Bull. Mus. Paris x, **n. spp.**
- Palemonetes varians* in E. Norfolk, p. 649; GURNEY, Tr. Norfolk Soc. vii: *P. kadiakensis*, p. 30, fig. 9; RATHBUN, Harriman Alaska Exped. x.
- Pandalopsis ampla*, p. 51, *aleutica*, p. 52, pl. i, fig. i & text-fig. 16, *longirostris*, p. 53, text-fig. 17, *dispar*, p. 54, pl. i, fig. 2; RATHBUN, t. c.
- Pandalus* (*Plesionika*) *bifurca*, pl. li, fig. 6, *alcocki*, pl. lii, figg. 2 & 4; ALCOCK & McARDLE, Illustr. Zool. Investigator: *P. borealis*, p. 35, *goniurus*, p. 38, pl. i, fig. 3, *jordani*, p. 40, pl. ii, fig. 3, *montagui tridens*, p. 41, pl. ii, fig. 2, *leptoceros*, p. 43, *platyceros*, p. 44, *hypsiniotus*, p. 46, pl. ii, fig. 5, *danae*, p. 47, text-fig. 13, *stenolepis*, p. 49, pl. ii, fig. 4 & text-fig. 14, *gurneyi*, p. 50, pl. ii, fig. 6 & text-fig. 15; RATHBUN, Harriman Alaska Exped. x.
- Paracrangon echinata*, p. 143; RATHBUN, t. c.
- Parapasiphæa latirostris*, pl. lii, fig. 1; ALCOCK & McARDLE, Illustr. Zool. Investigator: *Parapasiphæa serrata*, p. 25, fig. 7; RATHBUN, Harriman Alaska Exped. x.
- Pasiphæa magna* (?), p. 19, fig. 1, *pacifica*, p. 20, figg. 2 & 3, *emarginata*, p. 22, fig. 4, *princeps*, p. 23, *corteziana*, p. 24, fig. 5, *affinis*, p. 24, fig. 6; RATHBUN, t. c.
- Periclimenes borradalei* **n. nom.** for *P. tenuipes* Borradaile non Holmes, p. 34, *tenuipes* Holmes, p. 34, fig. 12; RATHBUN, t. c.
- P. soror*, Red Sea, p. 231; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Phye alcocki*, pl. lii, figg. 6, *6a* & *b*; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Pontonia californiensis*, p. 33, fig. 11; RATHBUN, Harriman Alaska Exped. x.
- Processa canaliculata*, dimorphism, p. 110; RATHBUN, t. c.
- P. coutieri*, Red Sea, p. 234; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Psulidopus huxleyi*, pl. li, figg. 5, *5a* & *b*; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Psathyrocaris fragilis*, pl. lii, fig. 5; ALCOCK & McARDLE, t. c.
- Sclerocrangon boreas*, p. 133, *alata*, p. 134, pl. iii, fig. 2 & text-figg. 72 & 73, *sharpi*, p. 135, pl. iii, figg. 1 & 1a; RATHBUN, Harriman Alaska Exped. x.
- Spirontocaris* (incl. *Heptacarpus*), keys to N.W. American spp., p. 56, *lamellicornis*, p. 62, text-fig. 18, *spina*, p. 63, pl. iii, fig. 5 & text-fig. 19,

arcuata, p. 64, pl. iii, fig. 4 and text-fig. 20, *murdochi*, p. 66, pl. iii, fig. 6 & text-fig. 21, *truncata*, p. 67, text-fig. 22, *bispinosa*, p. 68, text-fig. 23, *snyderi*, p. 69, text-fig. 24, *sica*, p. 69, text-fig. 25, *phippysii*, p. 70, *ochotensis*, p. 71, text-fig. 26, *dalli*, p. 72, text-fig. 27, *polaris*, p. 73, *unalaskensis*, p. 74, text-fig. 28, *vicina*, p. 75, text-fig. 29, *washingtoniana*, p. 76, text-fig. 30, *gracilis*, p. 77, text-fig. 31, *flexa*, p. 78, text-fig. 32, *decora*, p. 79, text-fig. 33, *tridens*, p. 81, text-fig. 34, *barbata*, p. 82, text-fig. 35, *stylus*, p. 84, text-fig. 36, *gaimardii belcheri*, p. 86, pl. iii, figg. 3 & 3a, *townsendi*, p. 87, text-fig. 37, *suckleyi*, p. 89, text-fig. 38, *moseri*, p. 91, text-fig. 39, *maxillipes*, p. 92, text-fig. 40, *brachydactyla*, p. 93, text-fig. 41, *camtschatica*, p. 94, text-fig. 42, *kincaidi*, p. 95, text-fig. 43, *biunguis*, p. 97, text-fig. 44, *pusiola*, p. 99, *herdmani*, p. 100, *sitchensis*, p. 102, *cristata*, p. 102, text-fig. 45, *stoneyi*, p. 103, text-fig. 46, *avina*, p. 103, text-fig. 47, *macrophthalmia*, p. 105, text-fig. 48; RATHBUN, Harriman Alaska Exped. x.

Sympasiphaea annectens, pl. lii, fig. 7; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Tozeuma erythraeum, Red Sea, p. 231; NOBILI, Bull. Mus. Paris x, n. sp.

Typton bouvieri, Red Sea, p. 233; NOBILI, t. c. n. sp.

Urocaris infraspinis, p. 31, fig. 10; RATHBUN, Harriman Alaska Exped. x.

Vercoia n. g. (*Crangonidae*), p. 157, *gibbosa*, S. Australia, p. 158, pl. xxxi, figg. 1-4; BAKER, Tr. Soc. S. Austral. xxviii, n. sp.

Virbius (?) *jactans*, Red Sea, p. 230; NOBILI, Bull. Mus. Paris x, n. sp.

STENOPIDEA.

Engystenopus palmipes, pl. i, fig. 5; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Spongiicola andamanica, pl. lviii, fig. 3; ALCOCK & McARDLE, t. c.

PENÆIDEA.

Amalopenæus elegans, p. 134, pl. ii, figg. 13-20; RIGGIO, Natural Sicil. xvii.

Aristeus (*Hemipeneus*) *crassipes*, pl. xlix, figg. 1 & 2, *A. semidentatus*, fig. 3,

A. (H.) carpenteri, fig. 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Gennadas borealis, p. 147, text-figg. 88 & 89; RATHBUN, Harriman Alaska Exped. x.

Metapeneus stebbingi, *cognatus*, *consobrinus*, *vaillanti*, Red Sea, p. 229; NOBILI, Bull. Mus. Paris x, n. spp.

Peneus (*Parapeneus*) *rectacutus*, pl. xlix, fig. 5, (*Metapeneus*) *coniger*, pl. i, figg. 2, 2a & b; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Sergestes bisulcatus, pl. i, figg. 1, 1a & b; ALCOCK & McARDLE, t. c.: *S. atlanticus*, p. 145, sp. p. 146; RATHBUN, Harriman Alaska Exped. x.

Solenocera (*Parasolenocera*) *annectens*, pl. xlix, fig. 6; ALCOCK & McARDLE, Illustr. Zool. Investigator.

INCERTÆ SEDIS.

Amphionides n. g. (near *Amphion*) *valdiviæ*, Atlantic and Indian Oceans, descr. from larvæ, p. 225; ZIMMER, Zool. Anz. xxviii, n. sp.

2. SCHIZOPODA.

[See also CLEVE (43), GADZIKIEWICZ (61), SCOTT in LINDSAY (115), LO BIANCO (116), MAR. BIOL. ASS. (125), NOBRE (145), PATIENCE (152), PETCH (160), RICHARD (171), ZYKOFF (256).]

Revision of Arctic spp.; ZIMMER, *Fauna Arctica* iii (3), pp. 415-491, 172 text-figg. Only spp. of which new figures are given are noted below.

Anaspides, evidence as to systematic position from chromatophore system, p. 330; KEEBLE & GAMBLE, *Phil. Trans. B.* cxcvi.

Boreophausia [see *Rhoda*].

Euphausia intermedia, p. 118, pl. ii, figg. 3-6; RIGGIO, *Natural. Sicil.* xvii: *E. pellucida*, p. 422, figg. 12-15; ZIMMER, *Fauna Arctica* iii.

Macromysis, spp., colour-physiology; KEEBLE & GAMBLE, *Phil. Trans. B.* cxcvi, pp. 295-388.

M. nigra, coast of England, p. 331, pl. xviii, figg. 1-3, pl. xix, figg. 4-6, pl. xxi, figg. 10, 11 & 17; KEEBLE & GAMBLE, t. c. **n. sp.**

Mysis relicta: embryos figured, p. 107, figg. 1 & 2; KANE, *Irish Natural. xiii*: habits, distribution &c., p. 677; SAMTER & WELTNER, *Zool. Anz.* xxvii.

Neomysis vulgaris in *E. Norfolk*, p. 649; GURNEY, *Tr. Norfolk Soc.* vii.

Nyctiphanes norvegica, p. 419, figg. 2-5; ZIMMER, *Fauna Arctica* iii.

Rhoda [= *Boreophausia*] *inermis*, p. 420, figg. 6-9, *raschii*, p. 421, figg. 10 & 11; ZIMMER, t. c.

Thysanoessa neglecta, p. 423, figg. 16 & 17, *longicaudata*, p. 424, figg. 18-21; ZIMMER, t. c.

3. STOMATOPODA.

[See also GADZIKIEWICZ (61), MAR. BIOL. ASS. (125), NOBRE (145), †WALTHER (230).]

Alima robusta, Indian Ocean, p. 379, pl. xxvii, fig. 6, *macrocephala* (locality ?), p. 380, pl. xxvii, figg. 1-1c, *subtruncata*, S. Atlantic, p. 382, pl. xxvii, fig. 4, *longicauda*, Benguela current, p. 384, pl. xxvii, figg. 8 & 8a, *strigosa*, Indian Ocean, p. 384, pl. xxvii, figg. 3 & 3a, *punctifera*, S. Atlantic, p. 386, pl. xxviii, figg. 1 & 1a, *triangularis*, Mediterranean, p. 387, pl. xxvii, figg. 7 & 7a, *paradoxa*, Agulhas Bank, p. 387, pl. xxvii, figg. 2-2b, sp., pl. xxvii, fig. 5; JURICH, *Stomatopoden "Valdivia," n. spp.* (larvæ).

Coroniderichthus bituberculatus, p. 394, pl. xxviii, fig. 3; JURICH, t. c.

Erichthus proprius (locality ?), p. 397, pl. xxviii, figg. 2-2e, *pygmæus*, Atlantic, p. 398, pl. xxxviii, figg. 6 & 6a, *acer*, Indian Ocean, p. 399, pl. xxviii, figg. 8, 8a & 9, sp., p. 399, pl. xxviii, fig. 7; JURICH, t. c. **n. spp.** (larvæ).

Gonodactylus chiragra, p. 375, pl. xxvi, figg. 4, 4a, 5 & 5a; JURICH, t. c.

Lysierichthus pulcher, p. 390, pl. xxix, figg. 2-2b, *vitreus*, p. 391, pl. xxvi, figg. 6 & 6a, *duvaucellei*, p. 393, pl. xxvi, fig. 7; JURICH, t. c.

Lysiosquilla eusebia, p. 117; RIGGIO, *Natural. Sicil.* xvii.

L. vicina, Red Sea, p. 228; NOBILI, *Bull. Mus. Paris* x: *L. valdiviensis* (locality ?), p. 372, pl. xxvi, figg. 2-2g; JURICH, *Stomatopoden "Valdivia," n. spp.*

Odonterichthus tenuicornis, Indian Ocean, p. 396, pl. xxviii, fig. 4; JURICH, t. c. **n. sp.** (larva).

Pseuderichthus distinguendus, p. 394, pl. xxviii, fig. 5, *communis*, p. 395, pl. xxix, fig. 1; JURICH, t. c.

Squilla empusa, p. 366, pl. xxv, fig. 3, *microphthalma*, p. 368, pl. xxvi,

fig. 1, *leptosquilla*, p. 370, pl. xxv, figg. 1 & 1b, var. *dentata*, **n. var.**, p. 372, pl. xxv, fig. 2; JURICH, t. c.
S. minor, Zanzibar, p. 364, pl. xxv, figg. 4 & 4a; JURICH, t. c. **n. sp.**

4. CUMACEA.

[See also GADZIKIEWICZ (61), LOŠKO (118), MAR. BIOL. ASS. (125), SCOTT (191).]

Cyclaspis costata, p. 168, pl. iii, figg. 39–53, *picta*, p. 170, pl. iii, figg. 54 & 55, *herdmani*, p. 171, pl. iii, figg. 56–59, pl. iv, figg. 60–66, *hornelli*, p. 172, pl. iv, figg. 67–71, Ceylon; CALMAN, Rep. Ceylon Pearl Fisheries ii, **n. spp.**

Eocuma, p. 160, key to spp. p. 161, *sarsii*, p. 166, pl. ii, figg. 35–38; CALMAN, t. c.

E. taprobanica, p. 162, pl. i, figg. 1–20, pl. ii, figg. 21–28, *affinis*, p. 165, pl. ii, figg. 29–34, Ceylon; CALMAN, t. c. **n. spp.**

Iphinoë macrobrachium, Ceylon, p. 173, pl. iv, figg. 72–75; CALMAN, t. c. **n. sp.**

Nannastacus stebbingi, Ceylon, p. 176, pl. v, figg. 91–93; CALMAN, t. c. **n. sp.**

Paradiastylis n. g. (*Diastylidae*), p. 173, *brachyura*, Ceylon, p. 174, pl. v, figg. 76–90; CALMAN, t. c. **n. sp.**

5. TANAIIDACEA.

[See also MAR. BIOL. ASS. (125).]

Tanaioidea n. nom. for *Isopoda chelifera*, p. 3; RICHARDSON, P. U. S. Mus. xxvii.

Tanais, list of spp. p. 7, *philetærus*, Ceylon, p. 7, pl. ii; STEBBING, Spolia Zeylan. ii, **n. sp.**

6. ISOPODA.

[See also ALZONA (4), CHOBOUT (41), FLORENTIN (58), GADZIKIEWICZ (61), GIARD (66), GURNEY (78), LO BIANCO (116), LOŠKO (118), MAR. BIOL. ASS. (125), MAZIARSKI (128), NOBRE (145 & 146), PATIENCE (152), PATTERSON (153), PETCH (160), RICHARD (171), RICHARDSON (175), SCHARFF (187), DOFLEIN in SCHNEE (189), SCOTT (191), ULMER (224), VALLENTIN (226), VIRÉ (227 & 228), †WALTHER (230), WELCH (232), WHEELER (235).]

Review of morphology, development, habits and distribution; RICHARDSON, P. U. S. Mus. xxvii, pp. 2–31.

ASELLOTA.

Aselloidea n. nom. for *Asellota*, p. 3; RICHARDSON, P. U. S. Mus. xxvii.

Asellus tomalensis, p. 321, pl. xxxvii, figg. 39–42; HOLMES, P. Calif. Ac. (3) Zool. iii: *A. aquaticus*, p. 70, *cavaticus*, p. 71; KOCH, Festschr. Ges. Nurnberg 1901.

A. tomalensis, p. 224, figg. 110–112; RICHARDSON, Harriman Alaska Exped. x, **n. sp.**

Heterias n. nom. for *Janirella* Sayce non Bonnier, p. 6; RICHARDSON, P. U. S. Mus. xxvii.

Janirella, see *Heterias*.

Janiropsis kincaidi, Alaska, p. 221, figg. 102–107, *californica*, California, p. 223, figg. 108 & 109; RICHARDSON, Harriman Alaska Exped. x, n. spp.

PHREATOICOIDEA.

Phreatoicus australis; SAYCE, Victorian Natural. xx, p. 151.

FLABELLIFERA.

Cymothoidea, n. nom. for *Flabellifera*, p. 3; RICHARDSON, P. U. S. Mus. xxvii.

Æga ventrosa, p. 432, pl. xii, figg. 5–8, pl. xiii, figg. 8 & 9, *deshayesiana*, p. 434, pl. xii, figg. 1–4, pl. xiii, figg. 10 & 11; NORMAN, Ann. Nat. Hist. (7) xiv.

Æ. megalops, off coast of Portugal, 45 fath., p. 434, pl. xiii, figg. 1–7; NORMAN & STEBBING, t. c. n. sp.

Ægide, notes on British spp., p. 432; NORMAN, t. c.

Alcirona, key to spp., p. 708, *maldivensis*, Maldiv Ids., p. 708, p. li, B; STEBBING, Fauna Maldiv ii, n. sp.

Cæcosphaeroma, sp., habits, &c.; GAL, Bull. Soc. Nimes xxxi.

Calathura, key to spp., p. 700, *borradailei*, Maldiv Ids., p. 700, pl. xlix A; STEBBING, Fauna Maldiv ii, n. sp.

Cirolana harfordi, p. 319, pl. xxxvii, figg. 32–38; HOLMES, P. Calif. Ac. (3), Zool. iii: *C. latistylis*, p. 702; STEBBING, Fauna Maldiv ii.

C. japonensis, Japan, p. 35, figg. 3–5; RICHARDSON, P. U. S. Mus. xxvii: *C. sulcaticauda*, Maldiv Ids., p. 701, pl. xlix, B; STEBBING, Fauna Maldiv ii: *C. willeyi*, Ceylon, p. 11, pl. iii; STEBBING, Spolia Zeylan. ii: n. spp.

Cirolanide, notes on British spp., p. 437; NORMAN, Ann. Nat. Hist. (7) xiv.

Corallana hirsuta, p. 704, pl. 1, B; STEBBING, Fauna Maldiv ii: *C. nodosa*, p. 14, pl. i, B; STEBBING, Spolia Zeylan. ii.

Corallanide, notes on genera, p. 703; STEBBING, Fauna Maldiv ii.

Cyathura pusilla, Ceylon, p. 9, pl. vi, B; STEBBING, Spolia Zeylan. ii, n. sp.

Cymodocea acuta, Japan, p. 38, figg. 8–10; RICHARDSON, P. U. S. Mus. xxvii: *Cymodoce bicarinata*, Maldiv Ids., p. 712, pl. lii, B; STEBBING, Fauna Maldiv ii: n. spp.

Cymothoa, embryology (abstract of paper by NUSBAUM); HOYER, Zool. Zentrbl. xii, pp. 130–133: *C. borbonica*, p. 709; STEBBING, Fauna Maldiv ii.

Dynamene cordata, p. 302, pl. xxxiv, figg. 8–10, *glabra*, p. 304; HOLMES, P. Calif. Ac. (3) Zool. iii.

D. sculpta, California, p. 300, pl. xxxiv, figg. 1–7; HOLMES, t. c. n. sp.

Excorallana n. g. (= *Corallana* Hansen & Richardson, non Dana), p. 704; STEBBING, Fauna Maldiv ii.

Excorallanide n. fam. for *Excorallana*, p. 704; STEBBING, t. c.

Gnathia maxillaris, metamorphosis and life-history; SMITH, Mt. Stat. Neapel xvi, pp. 469–479, pl. xviii.

Indusa carinata (on *Mugil hospes*), W. coast of Panama, p. 52, figg. 29–31; RICHARDSON, P. U. S. Mus. xxvii, n. sp.

Lanocira gardineri, p. 706, pl. li, A, *rotundicauda*, p. 707, pl. 1, A, Maldiv Ids.; STEBBING, Fauna Maldiv ii, n. spp.

Limnoria, key to spp., p. 714, *pfefferi*, Maldiv Ids., p. 714, pl. lii, A; STEBBING, t. c. n. sp.

Livoneca propinqua, Japan, p. 37, figg. 6 & 7; RICHARDSON, P. U. S. Mus. xxvii, n. sp.

- Meinertia gilberti* (on *Mugil hospes*), Mazatlan, p. 53, figg. 32 & 33 ;
 RICHARDSON, t. c. **n. sp.**
Rocinela angustata, p. 33, affinis, p. 33, figg. 1 & 2, Japan ; RICHARDSON,
 t. c. **n. spp.**
Sphæroma pentodon, p. 323, pl. xxxvii, fig. 43 ; HOLMES, P. Calif. Ac. (3)
 Zool. iii : *S. (Exosphæroma ?) globicauda*, p. 711 ; STEBBING, Fauna
 Maldive ii : *S. terebrans*, p. 16, pl. iv ; STEBBING, Spolia Zeylan. ii.
S. pentodon, California, p. 214, fig. 96 ; RICHARDSON, Harriman Alaska
 Exped. x : *S. retrolevis*, Japan, p. 47, fig. 23 ; RICHARDSON, P. U. S.
 Mus. xxvii : **n. spp.**
Sphæromidæ, remarks on relations of genera ; HOLMES, P. Calif. Ac. (3)
 Zool. iii, p. 295.

VALVIFERA.

- Idoteoidea*, **n. nom.** for *Valvifera*, p. 3 ; RICHARDSON, P. U. S. Mus. xxvii.
Arcturidæ, notes on British spp., p. 444 ; NORMAN, Ann. Nat. Hist. (7) xiv.
Arcturus scabrosus, Faroe Channel, 327–430 fath., p. 445 ; NORMAN, t. c. :
A. hirsutus, Japan, p. 41, fig. 16 ; RICHARDSON, P. U. S. Mus. xxvii :
A. simplicissimus, p. 406, figg. 114 *a-c*, *dentatus*, p. 408, figg. 115 *a-c*,
alcicornis, p. 410, figg. 116 *a-c*, *nodosus*, p. 412, figg. 117 *a-d*, *serru-*
latus, p. 414, figg. 118 *a-c*, New South Wales ; WHITELEGGE, Mem.
 Austral. Mus. iv : **n. spp.**
Astacilla bocagei, Porto, p. 93, pl. i ; NOBRÆ, Ann. Sci. nat. Porto viii,
n. sp.
Holognathidæ, **n. fam.**, p. 67 ; THOMSON, Ann. Nat. Hist. (7) xiv.
Holognathus **n. g.** (*Holognathidæ*), *stewarti* (Filhol), p. 67, pl. i ; THOMSON,
 t. c.
Idotea Weber 1795, type *emerita* Fabr. [see *Hippideæ*], p. 171 ; RATHBUN,
 P. Soc. Washington xvii : *I. gracillima*, p. 216, figg. 97 & 98 ;
 RICHARDSON, Harriman Alaska Exped. x.
Idoteidæ, notes on British spp., p. 440 ; NORMAN, Ann. Nat. Hist. (7) xiv.
Pentias **n. g.** (*Idoteidæ*) *hayi*, Japan, p. 47, figg. 24 & 25 ; RICHARDSON,
 P. U. S. Mus. xxvii, **n. sp.**
Symmium **n. g.** (*Idoteidæ*), p. 39, *caudatus*, Japan, p. 40, figg. 11–15 ;
 RICHARDSON, t. c. **n. sp.**
Synidotea ritteri, San Francisco, p. 219, figg. 99–101 ; RICHARDSON,
 Harriman Alaska Exped. x, **n. sp.**

EPICARIDEA.

- Bopyroidea*, **n. nom.** for *Epicaridea*, p. 4 ; RICHARDSON, P. U. S. Mus.
 xxvii.
 Revision of American spp. (Pacific and Atlantic) with new hosts and
 localities for many spp. ; RICHARDSON, t. c. pp. 58–89.
 Cryptoniscan stage of one of the *Epicaridea*, from *Onisimus plautus*
 (*Gammaridea*) descr. but not named, p. 46, 2 text-figg. ; STEBBING,
 Bijdr. Dierk. 17/18.
Argeia pugettensis, p. 60, figg. 35–40 ; RICHARDSON, P. U. S. Mus. xxvii.
Bopyrina abbreviata (on *Hippolyte zostericola*) Florida, p. 71, figg. 56–59,
urocaridis (on *Urocaris longicaudata*) Florida, p. 73, figg. 60–62,
thorii (on *Thor floridanus*), Florida, p. 74, fig. 63 ; RICHARDSON, t. c.
n. spp.
Diplophryxus **n. g.** (*Bopyridæ*), p. 50, *jordani* (on *Palæmon serrifer*), p. 50,
 figg. 26–28 ; RICHARDSON, t. c. **n. sp.**
Eumetor (?) sp. in *Sacculina* on *Pinnotheres* in *Spondylus*, Persian Gulf ;
 PÉREZ, Pr.-verb. Soc. Bordeaux 1902–1903, pp. 109 & 110.

- Ione thompsoni* (on *Callianassa stimpsoni*), Massachusetts, p. 75, figg. 64-68; RICHARDSON, P. U. S. Mus. xxvii, **n. sp.**
- Munidion parva* (on *Munida quadrispina*), Straits of Fuca, p. 81, pp. 76-79; RICHARDSON, t. c. **n. sp.**
- Parapenæon* **n. g.** (*Bopyridæ*) *consolidata* (on *Parapenæus dalei*), Japan, p. 43, figg. 17-20; RICHARDSON, t. c. **n. sp.**
- Phryxus* sp., p. 45, figg. 21 & 22; RICHARDSON, t. c.
- Probopyrus palæmoneticola*, p. 66, figg. 41-43, *alpehi*, p. 67, figg. 44 & 45; RICHARDSON, t. c.
- P. bithynis* (on *Bithynis ohionis* and *B. acanthurus*), Louisiana and Nicaragua, p. 68, figg. 46-51, *floridensis* (on *Palæmonetes exilipes*), Florida, p. 70, figg. 52-55; RICHARDSON, t. c. **n. spp.**
- Pseudione galacanthæ*, p. 83, figg. 80-82; RICHARDSON, t. c.
- P. furcata* (? host), Virginia, p. 79, figg. 69-71, *curtata* (on *Petrolisthes sexspinosus*), Key West, p. 80, figg. 72-75, *tuberculata* (on *Lithodes diomedææ*), Patagonia, p. 84, figg. 83-87, *paucisecta* (on *Munida curripes*), Patagonia, p. 85, figg. 88-91; RICHARDSON, t. c. **n. spp.**
- Stegias* **n. g.** (*Bopyridæ*) *clibanarii* (on *Clibanarius tricolor*), Bermudas, p. 59, fig. 34; RICHARDSON, t. c. **n. sp.**
- Tylokepon* **n. g.** (*Bopyridæ*), p. 716, *bonnieri* (on *Tylocarcinus styx*), Maldive Ids., p. 716, pl. liii; STEBBING, Fauna Maldive ii, **n. sp.**
- Urobopyrus* **n. g.** (*Bopyridæ*) *processæ* [*processi* on p. 87] (on *Processa canaliculata*), E. coast of S. America, p. 86, fig. 92; RICHARDSON, P. U. S. Mus. xxvii, **n. sp.**

ONISCOIDEA.

- Notes on British spp.; NORMAN & BRADY, Ann. Nat. Hist. (7) xiv, pp. 449-450.
- Keys to genera and spp. of S. Germany and the Tyrol; KOCH, Festschr. Ges. Nurnberg 1901, pp. 17-72.
- Supposed statocysts in *Oniscoidea*; WENIG, SB. Bohmisch Ges. 1903, xxxix, 12 pp., 1 pl.
- Armadillidium depressum*, p. 23, *nasatum*, p. 23, *versicolor*, p. 24, *pulchellum*, p. 27, *vulgare*, p. 29, *opacum*, p. 30, *pictum*, p. 32, *decipiens*, p. 33; KOCH, Festschr. Ges. Nurnberg 1901.
- A. albifrons*, Meran, p. 25, *petræum*, Torbole, p. 26, *riparium*, Torbole, p. 28, *oliveti*, Torbole, p. 31; KOCH, t. c.: *A. quadrifrons*, New York State, p. r211, text-fig. 2; STOLLER, Rep. N. York Mus. liv (i): **n. spp.**
- Cylisticus convexus*, p. 53; KOCH, Festschr. Ges. Nurnberg 1901.
- Éoarmadillidium* **n. g.**, *granulatum*, Tertiary (?), Hérault, p. 146, text-figg. 1-3; DOLLFUS, Feuille Natural. (4) xxxiv, **n. sp.**
- Haplophthalmus mengei*, p. 68; KOCH, Festschr. Ges. Nurnberg 1901.
- Ligidium hypnorum*, p. 69; KOCH, t. c.
- L. cæcum*, Crimea, p. 327, text-figg. 9-11; CARL, Zool. Anz. xxviii: *L. longicaudatum*, New York State, p. r208, text-fig. 1; STOLLER, Rep. N. York Mus. liv (i): **n. spp.**
- Ligia* Weber, 1795, syn. of *Cancer*, p. 172; RATHBUN, P. Soc. Washington xvii.
- Metoponorthus major*, p. 64, text-fig. 5, *orientalis*, fig. 6; DYDUCH, Bull. Ac. Cracovie 1903: *M. amœnus*, p. 54, *pruinusosus*, p. 55; KOCH, Festschr. Ges. Nurnberg 1901.
- M. benaci*, Torbole, p. 56; KOCH, t. c. **n. sp.**
- Oniscus murarius*, p. 61, *taniola*, p. 62, *madidus*, p. 64, *minutus*, p. 65; KOCH, t. c.: *O. murarius*, feeding on lichens, p. 367; STAHL, Denk. Ges. Jena xi.

- O. languidus*, Ludwigsburg, p. 63, *lamperti*, Hohenlandsberg, p. 63 ; KOCH, Festschr. Ges. Nurnberg 1901, **n. spp.**
- Philoscia muscorum*, p. 57, *madida*, p. 58 ; KOCH, t. c.
- P. fischeri*, Teck, p. 59 ; KOCH, t. c. **n. sp.**
- Platyarthus hoffmannseggii*, p. 34 ; KOCH, t. c.
- Porcellio rathkei*, p. 62, text-fig. 1, *affinis*, fig. 2, *gallicus*, fig. 3, *politus*, fig. 4 ; DYDUCH, Bull. Ac. Cracovie 1903 : *P. scaber*, p. 38, *ochraceus*, p. 39, *lævis*, p. 40, *pictus*, p. 41, *conspersus*, p. 43, *dubius*, p. 44, *confluens*, p. 45, *ratzeburgi*, p. 46, *rathkei*, p. 50 ; KOCH, Festschr. Ges. Nurnberg 1901.
- P. tirolensis*, S. Tyrol, p. 36, *cruentatus*, Sugenheim, p. 37, *mildei*, Meran, p. 41, *saltuum*, S. Alps, p. 48, *parietinus*, Landstuhl, p. 49, *sociabilis*, Vahrn, p. 51, *cognatus*, S. Tyrol, p. 52 ; KOCH, t. c. **n. spp.**
- Styloniscus gracilis*, p. 318, pl. xxxvi, figg. 29–31 ; HOLMES, P. Calif. Ac. (3) Zool. iii.
- Trichoniscus pusillus*, p. 66, *roseus*, p. 67 ; KOCH, Festschr. Ges. Nurnberg 1901.
- T. papillicornis*, Alaska, p. 227, figg. 113–117 ; RICHARDSON, Harriman Alaska Exped. x, **n. sp.**

7. AMPHIPODA.

[See also ALZONA (4), BRUNTZ (29 & 30), GADZIKIEWICZ (61), GURNEY (78), KOROTNEFF (106), LO BIANCO (116), LOŠKO (118), MAR. BIOL. ASS. (125), NOBRE (145 & 146), NORMAN (148), PATTERSON (153), PETCH (160), RICHARD (171), SAYCE (186), SCOTT (191), STEAD (205), ULMER (224), VIRÉ (227 & 228), ZYKOFF (256).]

GROCHOWSKI (69), appears to deal with the general classification of Amphipoda. On p. 33 the group is divided into four orders *Antennuloremda* **nov.** (for *Constantia Branickii* Dyb.), *Crevettina*, *Hyperina* and *Læmodipoda*.

GAMMARINA.

- Acanthonotozoma inflatum*, p. 32, pl. vi ; STEBBING, Bijdr. Dierk. 17/18.
- Acanthostephea behringanus*, p. 315, pl. xxxvi, figg. 25–28 ; HOLMES, P. Calif. Ac. (3) Zool. iii.
- Acanthozone hystrix*, p. 29 ; STEBBING, Bijdr. Dierk. 17/18.
- Allorchestes ochotensis*, p. 233, fig. 118 ; HOLMES, Harriman Alaska Exped. x.
- Ampelisca*, key to some spp., p. 249, *tridens*, p. 249, pl. ii, fig. 11, pl. iv, fig. 11, *scabripes*, p. 250, pl. ii, fig. 12, *brachyceras*, p. 251, pl. ii, fig. 13, *cyclops*, p. 253, pl. ii, fig. 14, *chevreuxi*, p. 254, pl. iii, fig. 15, Ceylon ; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. spp.**
- Amphithoe scitula*, p. 314, pl. xxxvi, figg. 21–24 ; HOLMES, P. Calif. Ac. (3) Zool. iii.
- A. intermedia*, Ceylon, p. 290, pl. vii, fig. 46 ; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Anamixis stebbingi*, Ceylon, p. 259, pl. iii, fig. 18 ; WALKER, t. c. **n. sp.**
- Anonyx nugax*, p. 313, pl. xxxv, figg. 17–19, pl. xxxvi, fig. 20 ; HOLMES, P. Calif. Ac. (3) Zool. iii : *A. liljeborgii*, p. 8 ; STEBBING, Bijdr. Dierk. 17/18.
- Apherusa clevei*, Skagerak ; SARS, Publ. internat. expl. Mer, No. 10, 4 pp., 1 pl., **n. sp.**
- Barentsia* (see *Gulbarentsia*) **n. g.** (*Ediceridæ*), p. 25, *hoekii*, 71° 32' N., 64° 37' E., p. 25, pl. v ; STEBBING, Bijdr. Dierk. 17/18, **n. sp.**

- Byblis intermedius*, 72° 9' N., 24° 42' E., 145 fath., p. 18; STEBBING, t. c. **n. sp.**
- Cheiriphotis* **n. g.** (*Photidae*), p. 283, *megacheles*, Ceylon, p. 284, pl. vi, fig. 42; WALKER, Rep. Ceylon Pearl Fisheries ii.
- Chevalia* **n. g.** (*Photidae*), p. 288, *avicula*, Ceylon, p. 288, pl. vii, fig. 50, pl. viii, fig. 50; WALKER, t. c. **n. sp.**
- Chironisimus debruynei*, p. 13; STEBBING, Bijdr. Dierk. 17/18.
- Corophium trienonyx*, Ceylon, p. 25, pl. vi, A; STEBBING, Spolia Zeylan. ii, **n. sp.**
- Decamine serraticrus*, Ceylon, p. 265, pl. iv, fig. 24; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Elasmopus subcarinatus*, p. 275, pl. v, fig. 34; WALKER, t. c.
- E. dubius*, p. 276, pl. v, fig. 35, *spinimanus*, p. 277, pl. v, fig. 36, *serrula*, p. 277, pl. viii, fig. 37, Ceylon; WALKER, t. c. **n. spp.**
- Erichthonius macrodactylus*, p. 292, pl. vii, fig. 48; WALKER, t. c.
- Eusirogenes* **n. g.** (*Eusiridae*), p. 15, *dolichocarpus*, Bay of Biscay, 1000–2000 fath., p. 15, pl. ii, A; STEBBING, Tr. Linn. Soc. London (2) Zool. x, **n. sp.**
- Eusiroides caesaris* var., p. 264, pl. iv, fig. 22; WALKER, Rep. Ceylon Pearl Fisheries ii.
- E. orchomenipes*, Ceylon, p. 264, pl. iv, fig. 23; WALKER, t. c. **n. sp.**
- Gallea* **n. g.** (*Amphilochidae*), p. 256, *tecticauda*, Ceylon, p. 256, pl. iii, fig. 16, pl. viii, fig. 16; WALKER, t. c. **n. sp.**
- Gammaridae*, revision of genera (in Polish); GROCHOWSKI, Kosmos polski. xxix, p. 37.
- Gammaropsis tenuicornis*, Puget Sound, p. 239, fig. 124; HOLMES, Harriman Alaska Exped. x: *G. zeylanicus*, Ceylon, p. 282, pl. vi, fig. 41; WALKER, Rep. Ceylon Pearl Fisheries ii: **n. spp.**
- Gammarus* sp., toxicity of distilled water; BULLOT, Univ. Calif. Publ. Physiol. i (22), pp. 199–217: *G. pulex*, external and internal anatomy, habits, reproduction, development; CUSSANS, P. Liverp. biol. Soc. xviii, pp. 327–373, pls. i–iv, 6 text-figg.: *G. locusta*, embryology; HEIDECKE, Jena. Zeitschr. xxxviii, pp. 505–552, pls. xiii–xvi: *G. similis*, p. 396, pl. i, figg. 5 & 14, pl. ii, figg. 44, 45, 67, pl. iii, figg. 72–75 & 91, pl. iv, figg. 103–106, *robustoides*, p. 401, pl. 1, figg. 2, 9, 16, 21, 26, 31, 32, pl. ii, figg. 34, 35, 55, 56, pl. iii, figg. 78, 80, 84, 85, 90, pl. iv, figg. 94, 96, 112, 120–123, *crassus*, p. 403, pl. i, figg. 3, 10, 17, 22, 27, pl. ii, figg. 36–41, pl. iii, figg. 68, 69, 79, 81, 86, 87, pl. iv, figg. 95, 113, 114, 118, *obesus*, pl. i, figg. 7, 12, 19, 24, 29, pl. ii, figg. 48–53, pl. iii, figg. 76, 77, 92, 93, pl. iv, figg. 107–109, 115–117; SOWINSKY, Zapiski Kiev. Obshch. xviii.
- G. olivianus*, p. 399, pl. i, figg. 6 & 13, pl. ii, figg. 46, 47, 57–64, *sarsii*, p. 401 [localities?]; SOWINSKY, t. c. **n. spp.**
- Grandidierella* **n. g.** (*Corophiidae*), p. 173, *mahafalensis*, in a salt lake, Madagascar, p. 166, figg. 1–19; COUTIERE, Bull. Soc. Philom. (9) vi, **n. sp.**
- Guernea laevis*, p. 267, pl. iv, fig. 26; WALKER, Rep. Ceylon Pearl Fisheries ii.
- Gulbarentsia* **n. nom.** for *Barentsia*, Stebbing non Hincks, p. 2; STEBBING, Bijdr. Dierk. 17/18.
- Haploops robusta*, p. 18, *tubicola*, p. 19, *laevis*, p. 19, pl. iii; STEBBING, t. c.
- Hippomedon squamosus*, 72° 9' N., 24° 42' E. 154 fath., p. 4, pl. i; STEBBING, t. c. **n. sp.**
- Hornellia* **n. g.** (*Gammaridae* or *Melphidippidae*), p. 268, *incerta*, Ceylon, p. 269, pl. iv, fig. 27; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Hyale nilssoni* var. (name *kuriensis* suggested if species distinct), p. 238; WALKER, t. c.

- Hyalella neveu-lemairei*, Lake Titicaca, p. 132, figg. 1 & 2; CHEVREUX, Bull. Soc. zool. France xxix, **n. sp.**
- Ichnopus taurus*, p. 238, pl. i, fig. 3; WALKER, Rep. Ceylon Pearl Fisheries ii.
- Jassa falcata*, p. 292, pl. vii, fig. 47; WALKER, t. c.
- Lembos podoceroïdes*, p. 279, pl. vi, fig. 39, *chelatus*, p. 280, pl. vi, fig. 40, Ceylon; WALKER, t. c. **n. spp.**
- Leucothoë hornelli*, Ceylon, p. 258, pl. iii, fig. 17, *stegoceras*, Singapore, p. 259, pl. iii, fig. 17A; WALKER, t. c. **n. spp.**
- Lysianax cinghalensis*, p. 242, pl. i, fig. 6; WALKER, t. c.
- L. calochir*, Ceylon, p. 243, pl. i, fig. 7; WALKER, t. c. **n. sp.**
- Maera rubro-maculata*, p. 272, pl. v, fig. 30, *tenella*, p. 272, pl. v, fig. 31, *scissimana*, p. 273, pl. v, fig. 32, *tenuicornis*, p. 273, pl. v, fig. 33; WALKER, t. c.
- M. othonides*, Ceylon, p. 271, pl. v, fig. 29; WALKER, t. c. **n. sp.**
- Melita anisochir*, p. 270, pl. iv, fig. 28; WALKER, t. c.
- M. zeylanica*, Ceylon, p. 22, pl. v; STEBBING, Spolia Zeylan. ii, **n. sp.**
- Monoculodes hansenii*, 71° 32' N., 67° 37' E., p. 22, pl. iv; STEBBING, Bijdr. Dierk. 17/18, **n. sp.**
- Niphargus* sp., habits, &c.; GAL, Bull. Soc. Nimes xxxi: *N.*; GROCHOWSKI, Kosmos polski. xxix, pp. 81, &c.: *N. kochianus*, Lough Mask, p. 274, pl. viii, figg. 1-3, *N. subterraneus*, Kent, p. 280, pl. viii, figg. 4 & 5; KANE, Ann. Nat. Hist. (7) xiv.
- Odius carinatus*, p. 238, fig. 123; HOLMES, Harriman Alaska Exped. x.
- Onisimus caricus*, p. 11, *brevicaudatus*, p. 12; STEBBING, Bijdr. Dierk. 17/18.
- Pallasiella quadrispinosa*, habits, distribution, &c., p. 683; SAMTER & WELTNER, Zool. Anz. xxvii.
- Paratylus granulosus*, Ceylon, p. 265; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Pareiasmopus suluensis*, p. 278, pl. vi, fig. 38; WALKER, t. c.
- Paronesimus n. g.* (*Lysianassidae*) *Barentsi*, 75° 49' N., 53° 42' E., p. 14, pl. ii; STEBBING, Bijdr. Dierk. 17/18, **n. sp.**
- Periculodes serra*, Ceylon, p. 262, pl. iv, fig. 20; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Photis longicaudata*, p. 286, pl. vi, fig. 43; WALKER, t. c.
- P. longimanus*, p. 286, pl. vii, fig. 44, *nana*, p. 287, pl. vii, fig. 45, Ceylon; WALKER, t. c. **n. spp.**
- Platophium læve*, p. 295, pl. vii, fig. 51; WALKER, t. c.
- P. synaptochir*, p. 296, pl. viii, fig. 52, *zeylanicum*, p. 297, pl. viii, fig. 53, Ceylon; WALKER, t. c. **n. spp.**
- Platyrischnopus herdmanni*, Ceylon, p. 247, pl. ii, fig. 10; WALKER, t. c. **n. sp.**
- Pontogammarus n. subg.* of *Gammarus*, p. 394; SOWINSKY, Zapiski Kiev. Obshch. xviii.
- Pontoporeia affinis*, habits, distribution, &c., p. 686; SAMTER & WELTNER, Zool. Anz. xxvii.
- Rozinante n. g.* (near *Paramphithoë*), p. 38, *fragilis* (Goës), p. 39; STEBBING, Bijdr. Dierk. 17/18.
- Siphonocetes orientalis*, Ceylon, p. 294, p. vii, fig. 49; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Socarnella n. g.* (*Lysianassidae*), p. 239, *bonnierii*, Ceylon, p. 239, pl. i, fig. 4; WALKER, t. c. **n. sp.**
- Stenothoë marina* var. *sinhalensis* [**n. var.**], Ceylon, p. 261; WALKER, t. c.
- S. alaskensis* Pribyloff Is., p. 236, figg. 121 & 122; HOLMES, Harriman Alaska Exped. x: *S. gallensis*, Ceylon, p. 261, pl. iii, fig. 19; WALKER, Rep. Ceylon Pearl Fisheries ii: **n. spp.**

- Tiron thompsoni*, Ceylon, p. 263, pl. iv, fig. 21 ; WALKER, t. c. **n. sp.**
Tritata antarctica, Ceylon, p. 266, pl. iv, fig. 25 ; WALKER, t. c.
Tryphosa nugax, Alaska, p. 234, figg. 119 & 120 ; HOLMES, Harriman Alaska
 Exped. x : *T. cucullata*, Ceylon, p. 244, pl. iv, fig. 8 ; WALKER, Rep.
 Ceylon Pearl Fisheries ii : **n. spp.**
Urothoe spinidigitus, Ceylon, p. 245, pl. i, fig. 9 ; WALKER, t. c. **n. sp.**
Vijaya n. g. (*Lysianassidae*), p. 241, *tenuipes*, Ceylon, p. 241, pl. i, fig. 5 ;
 WALKER, t. c. **n. sp.**
Weyprechtia heuglini, p. 41 ; STEBBING, Bijdr. Dierk. 17/18.

HYPERINA.

- Key to some families, p. 17 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x.
 Notes on spp. from Messina ; RIGGIO, Natural. Sicil. xvii, p. 95.
Archæoscina n. g. (*Scinidæ*), p. 19, *bonnieri*, Bay of Biscay, 300–400 fath.,
 p. 19, pl. iii, A ; STEBBING, Tr. Linn. Soc. London (2) Zool. x, **n. sp.**
Brachyscelus, notes on spp., p. 40 ; STEBBING, t. c.
Elsia indica, p. 237, pl. i, fig. 2 ; WALKER, Rep. Ceylon Pearl
 Fisheries ii.
Hyperia luzoni, p. 33 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x :
H. bengalensis, p. 235, dimorphism of ♂, p. 236 ; WALKER, Rep.
 Ceylon Pearl Fisheries ii.
Hyperioides, notes on spp., p. 34 ; STEBBING, Tr. Linn. Soc. London (2)
 Zool. x.
Lanceola, notes and key to spp., p. 28 ; STEBBING, t. c.
Parahyperia, referred to *Hyperioides*, p. 34 ; STEBBING, t. c.
Parascelus parvus, p. 236, pl. i, fig. 1 ; WALKER, Rep. Ceylon Pearl
 Fisheries ii.
Parascina n. g. (*Scinidæ*), p. 20, *fowleri*, Bay of Biscay, to 2000 fath.,
 p. 21, pl. ii, B ; STEBBING, Tr. Linn. Soc. London (2) Zool. x, **n. sp.**
Parathemisto oblivia, p. 36 ; STEBBING, t. c.
Prinno macropa, p. 38, text-figg. 1 & 2 ; STEBBING, t. c.
Scina, notes and key to spp., p. 22, *lepisma*, p. 27, pl. iii, B ; STEBBING,
 t. c.
Scinidæ, def. and key to genera, p. 18 ; STEBBING, t. c.
Sphaeromimonectes n. g. (*Mimonectidæ*) *valdiviæ* [Atlantic?], p. 621, text-
 figg. 1 & 3, *gaussi*, Atlantic, p. 627 ; WOLTERECK, Zool. Anz. xxvii,
n. spp.
Thaumatops, larval stages described under name "*Physosoma*," p. 553 ;
 WOLTERECK, t. c.
Thaumonectes n. g. (*Thaumatopsidæ*), p. 93, *ducis aprutii*, Caribbean Sea,
 p. 93 and text-fig. ; SENNA, Bull. Soc. ent. Ital. xxxv, **n. sp.**
T., compared with larva of *Thaumatops*, p. 563 ; WOLTERECK, Zool. Anz.
 xxvii.
Vibilia, notes on spp., p. 31 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x.

CAPRELLINA.

- Caprella alaskensis*, p. 241, fig. 125, *scabra*, p. 243, fig. 126, *kincaidi*,
 p. 245, figg. 127 & 128. Alaska ; HOLMES, Harriman Alaska Exped. x,
n. spp.
Metaprotella excentrica, p. 224 ; MAYER, Rep. Ceylon Pearl Fisheries ii.
Monoliropus falcimanus, Ceylon, p. 225, text-figg. 1–9 ; MAYER, t. c. **n. sp.**

8. PHYLLOCARIDA.

[See also BROWNE & VALLENTIN (26), GADZIKIEWICZ (61), +GRABAU (67), MAR. BIOL. ASS. (125), +MUNTHER (140).]

+*Aptychopsis victoriae*, Silurian, Victoria, p. 315, pl. xvii, fig. 4; CHAPMAN, P. Soc. Victoria xvii, **n. sp.**

+*Ceratiocaris murchisoni* (!), p. 313, pl. xvii, figg. 5 & 6, *C. sp.*, p. 313, pl. xvii, figg. 7 & 8; CHAPMAN, t. c.

+*C. pritchardi*, Silurian, Victoria, p. 312, pl. xvii, figg. 2 & 2a; CHAPMAN, t. c.: *C. (Limnocris) praecedens*, Salina, New York, p. 92, pl. iii, figg. 5-10; CLARKE, Rep. N. York Mus. liv (1) : **n. spp.**

+*Dithyrocaris praecox*, Silurian, Victoria, p. 314, pl. xvii, fig. 3; CHAPMAN, P. Soc. Victoria xvii, **n. sp.**

+*Eleutherochelis n. g. whitfieldi*, p. 103; CLARKE, Rep. N. York Mus. liv (1) (see also Zittel's "Textbook of Palaeontology," English trans., p. 656).

+*Emmelezoe decora*, Salina, New York, p. 95, pl. ii, figg. 4-11, pl. iii, figg. 1-4; CLARKE, t. c. **n. sp.**

Nebalia bipes, p. 9, pl. iv, figg. 79 & 80, subsp. *geoffroyi*, p. 13, pl. iv, figg. 70 & 71, subsp. *valida* **n. subsp.** p. 13, pl. iv, fig. 74, subsp. (?) *japanensis*, p. 13, pl. iv, fig. 72, subsp. *chilensis*, p. 13, pl. iv, fig. 73; THIELE, Wiss. Ergebn. Valdivia viii.

N. longicornis, p. 9, pl. iv, figg. 66-69, subsp. *magellanica* **n. subsp.** p. 13, pl. iv, fig. 76, subsp. *soror* **n. subsp.** p. 14, pl. iv, fig. 77; THIELE, t. c.

Nebaliella n. g. p. 3, *antarctica*, Kerguelen and New Zealand, p. 4, pls. i & ii, figg. 1-24; THIELE, t. c. **n. sp.**

Nebaliopsis typica (? var. *atlantica* **n. var.** p. 24), p. 19, pl. iii, figg. 37-54, pl. iv, figg. 55-62; THIELE, t. c.

Paranebalia longipes, p. 14, pl. ii, figg. 25-36, pl. iv, figg. 63 & 64; THIELE, t. c.

+*Rhinocaris columbina*, p. 101, pl. iv, fig. 14, var. *livonensis* **n. var.**, p. 101, figg. 15 & 16, *scaphoptera*, p. 101, figg. 10 & 11, (*Elymocris*) *capsella*, p. 101, figg. 12 & 13, *bipennis*, p. 101, fig. 9; CLARKE, Rep. N. York Mus. liv (1).

B. ENTOMOSTRACA.

1. BRANCHIOPODA.

Unpaired eye, frontal organs &c.; ZOGRAF (252).

a. PHYLLOPODA.

[See also DADAY (51), EKMAN (56), ENTZ (57), +RANGE (163).]

Artemia salina var. *pacifica* **n. var.**, salt lakes, Honolulu and Laysan I. p. 630, figg. 1a-g; SARS, Zool. Jahrb. Syst. xix.

Estheria propinqua, p. 342, text-fig. 2; ZYKOFF, Zool. Anz. xxviii.

+*E. membranacea*, p. 103, pl. iv, figg. 1-4; CLARKE, Rep. N. York Mus. liv (1).

+*E. ortonii*, Coal Measures, Ohio, p. 109, pl. iv, figg. 5-8; CLARKE, t. c. **n. sp.**

Streptocephalus neumanni, Galla country, p. 371, pl. xiii; THIELE, Zool. Jahrb. Syst. xx, **n. sp.**

b. CLADOCERA.

[See also BROWNE & VALLENTIN (26), CLEVE (43), CUNNINGTON (48), ENTZ (57), KANE (100), LINDER (114), LOŠKO (118), MAR. BIOL. ASS.

(125), MONTI (136), PAVESI (155), †RANGE (163), SKORIKOW (197), SPRAGUE (202), STINGELIN (216), WESENBERG-LUND (234), ZACHARIAS (249), ZYKOFF (253, 254 & 256).]

Seasonal distribution in East Norfolk; GURNEY, Tr. Norfolk Soc. vii, p. 656.

Aceroperus harpæ var. *frigida* **n. var.** p. 23, text-figg. A & B; EKMAN, Zool. Jahrb. Syst. xxi.

Alona cambouei, p. 633, figg. 6a-d; SARS, Zool. Jahrb. Syst. xix: *A. acuticostata*, var. *tridentata* **n. var.** p. 349, pl. xii, figg. 18 & 19, *verrucosa*, var. p. 350, pl. xii, figg. 20 & 21, *intermedia*, var. *minor* **n. var.** p. 351, pl. xii, fig. 22, *davidi*, p. 352, pl. xii, fig. 23; STINGELIN, op. cit. xxi.

A. novæ-zealandiæ, New Zealand, p. 634, figg. 7a & b; SARS, op. cit. xix, **n. sp.**

Alonella sculpta, p. 353, pl. xii, figg. 24 & 25, var. *insulcata* **n. var.** p. 354, pl. xii, fig. 26, pl. xiii, figg. 27 & 28; STINGELIN, op. cit. xxi.

A. breviceps, Siam, p. 354, pl. xiii, figg. 29 & 29a; STINGELIN, t. c. **n. sp.**

Bosmina coregoni gibbera, male, p. 564, text-fig.; KEILHACK, Zool. Anz. xxvii.

B. meridionalis, New Zealand, p. 631, figg. 3a-c; SARS, Zool. Jahrb. Syst. xix: *B. hagmanni*, Amazons, p. 582, pl. xx, figg. 5 & 6; STINGELIN, op. cit. xx: **n. spp.**

Bosminopsis deitersi, Amazons, p. 584, pl. xx, figg. 7-10; STINGELIN, t. c.

Bythotrephes longimanus, structure of eye, p. 138, pl. ii; EKMAN, op. cit. xxi.

Camptocercus australis var. p. 347, pl. xii, fig. 17; STINGELIN, t. c.

Ceriodaphnia asperata, p. 650, text-fig. 3; MEISSNER, Zool. Anz. xxvii: *C. dubia*, p. 631, figg. 2a & b; SARS, Zool. Jahrb. Syst. xix: *C. cornuta*, p. 339, pl. xi, figg. 9-11; STINGELIN, op. cit. xxi.

Chydorus barroisi var. *lævis* **n. var.** p. 636, figg. 9 & 9a; SARS, op. cit. xix: *C.*, variation in Indian region, p. 357, pl. xiii, figg. 32 & 33, *sphaericus* var. *parvus*, p. 359, pl. xiii, fig. 34; STINGELIN, op. cit. xxi.

C. robustus, Sumatra, p. 360, pl. xiii, figg. 35-38; STINGELIN, t. c. **n. sp.**

Dadaya macrops, p. 587, pl. xx, figg. 11 & 12; STINGELIN, op. cit. xx: *D. macrops*, p. 356; STINGELIN, op. cit. xxi.

Daphnia hyalina, forma *pavesii*, p. 639, 1 fig.; BREHM & ZEDERBAUER, Verh. Ges. Wien liv: *D.* classification of alpine forms discussed, pp. 122-137, text-figg.; EKMAN, Zool. Jahrb. Syst. xxi: *D. pulex-pennata*, variation under influence of temperature, p. 439; OSTWALD, Arch. Entwicklmech. xviii: *D. pulex*, formation and structure of ephippium; WOLFF, Biol. Centrbl. xxiv, pp. 644, 697 & 761, 11 text-figg.: *D. pulex*, reactions to light and heat; YERKES, Mark Anniversary Volume, pp. 359-377.

Diaphanosoma excisum, p. 337, pl. xi, figg. 3 & 4, *sarsi*, p. 338, pl. xi, fig. 5, var. *volzi* **n. var.** p. 339, pl. xi, figg. 6-8; STINGELIN, Zool. Jahrb. Syst. xxi.

Drepanothrix dentata, p. 209, fig. 4; ZACHARIAS, Forschber. Plon xi.

Dunhevedia crassa, p. 357, pl. xiii, figg. 30 & 31; STINGELIN, Zool. Jahrb. Syst. xxi.

Evadne, notes and key to spp., p. 41; STEBBING, Tr. Linn. Soc. London (2) Zool. x.

Holopedium gibberum, p. 57, pl. i, figg. 3 & 4; STINGELIN, Rev. Suisse Zool. xii.

H. amazonicum, Amazons; STINGELIN, Zool. Jahrb. Syst. xx, p. 577, pl. xx, figg. 1 & 2, and Rev. Suisse Zool. xii, p. 55, pl. i, figg. 1 & 2, **n. sp.**

Hyalodaphnia cristata, variation under influence of temperature, p. 421; OSTWALD, Arch. Entwicklmech. xviii.

Ilyocypris halyi var. p. 346; STINGELIN, Zool. Jahrb. Syst. xxi.

Macrothrix spinosa, p. 633, figg. 5a & b; SARS, op. cit. xix.

M. affinis, Natal, p. 127, pl. viii, figg. 63-65; BRADY, P. Zool. Soc. London

- 1904, ii: *M. cornuta*, Turkestan, p. 508, figg. on pls. xxviii & xxix; DADAY, Zool. Jahrb. Syst. xix: *M. schauinslandi*, New Zealand, p. 632, figg. 4a & b; SARS, Zool. Jahrb. Syst. xix: **n. spp.**
- Moina propinqua*, p. 345, pl. xii, fig. 16; STINGELIN, Zool. Jahrb. Syst. xxi.
- Moinodaphnia brasiliensis*, Amazons, p. 580, pl. xx, figg. 3 & 4; STINGELIN, op. cit. xx, **n. sp.**
- Pleuroxus hastirostris*, New Zealand, p. 635, figg. 8a-c; SARS, op. cit. xix, **n. sp.**
- Podon leuckarti* attacking post-larval fish, p. 279; SCOTT, Rep. Fish. Board Scotland xxii (3).
- Pseudosida szalayii*, p. 335, pl. xi, figg. 1 & 2; STINGELIN, Zool. Jahrb. Syst. xxi.
- Saycia n. g.* (*Chydoridae*) p. 4, *orbicularis*, Melbourne, p. 5 & pl.; SARS, Arch. Naturv. Christian. xxvi, No. 8, **n. sp.**
- Simocephalus vetulus* var. *spinosulus* **n. var.** p. 342, *serrulatus* var. *productifrons* **n. var.** p. 343, pl. xi, figg. 12 & 13, pl. xii, fig. 14; STINGELIN, Zool. Jahrb. Syst. xxi.

2. COPEPODA.

- [See also BROWNE & VALLENTIN (26), ENTZ (57), GURNEY (78), KANE (100), LINDER (114), SCOTT in LINDSAY (115), LO BIANCO (116), MAR. BIOL. ASS. (125), MEISSNER (131), MONTI (136), NOBRE (145), PAVESI (155), PEARSON (157), RICHARD (171), A. SCOTT (190), SKORIKOW (197), STINGELIN (216), ULMER (224), VIRÉ (228), WESENBERG-LUND (234), WOLF (240), ZACHARIAS (249), ZYKOFF (253 & 254).]
- Achteres sandrae* (on *Lucioperca sandra*), Finland, p. 22, pl. i, figg. 1-14; GADD, Acta Soc. Faun. Fenn. xxvi (8), **n. sp.**
- Ætideus tenuirostris*, N. Atlantic, p. 116; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Alteutha interrupta*, p. 62, pls. xxxvi & xxxvii, *depressa*, p. 64, pl. xxxviii; SARS, Crust. Norway v.
- Amymone rubra*, p. 5, pl. i, fig. 13; BRADY, Tr. Soc. Northumb. i (1).
- Aspidiscus littoralis*, Norway, p. 79, pls. xlvi & xlvii; SARS, Crust. Norway v, **n. sp.**
- Attheyella grandidieri*, p. 639, figg. 12, a-l; SARS, Zool. Jahrb. Syst. xix.
- A. natalis*, Natal, p. 124, pl. vii, figg. 28-33; BRADY, P. Zool. Soc. London 1904, ii: *A. coronata*, Molokai, p. 641, figg. 13, a-k; SARS, Zool. Jahrb. Syst. xix: **n. spp.**
- Augaptilus fungiferus* [locality?], p. 597; STEUER, Zool. Anz. xxvii: *A. magnus*, p. 122, *gibbus*, p. 122, N. Atlantic; WOLFENDEN, J. Mar. Biol. Ass. vii: **n. spp.**
- Boeckella propinqua*, p. 636, figg. 10, a-h, *dilatata*, p. 638, figg. 11, a-e, New Zealand; SARS, Zool. Jahrb. Syst. xix, **n. spp.**
- Brachiella* [see *Thynnica*.]
- Bradya typica*, p. 46, pl. xxv; SARS, Crust. Norway v.
- B. dilatata*, Norway, p. 47, pl. xxvi; SARS, t. c. **n. sp.**
- Caligus lacustris*, p. 15, pl. i, figg. 26-30; GADD, Acta Soc. Faun. Fenn. xxvi (8).
- Candacia rotunda*, N. Atlantic, p. 118, pl. ix, figg. 10 & 11; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Canthocamptus arcticus*, p. 32, pl. i, fig. 1, *cuspidatus*, p. 33, pl. i, fig. 2, *schmeili* var. *lapponica*, **n. var.**, p. 35, pl. i, figg. 3-15; EKMAN, Zool. Jahrb. Syst. xxi.
- C. subterraneus*, Crimea, p. 323, text-figg. 1-8; CARL, Zool. Anz. xxviii, **n. sp.**

- Centropages arabicus*, p. 371, pl. xvi, figg. 1-9, pl. xvii, fig. 1, *notoceras*, p. 373, pl. xvii, figg. 2-10, pl. xviii, fig. 1, Arabian Sea; CLEVE, Arkiv Zool. i, **n. spp.**
- Chiridius vanhoeffeni*, N. Atlantic, p. 117, pl. ix, fig. 3; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Chirognatha*, **n. sect.** of *Harpacticoida*, p. 47; SARS, Crust. Norway v.
- Corycæus erythræus*, Red Sea, p. 376, pl. xviii, figg. 2-8, pl. xix, figg. 1-3; CLEVE, Arkiv Zool. i, **n. sp.**
- Ctenocalanus vanus*, p. 125, pl. ix, fig. 9; WOLFENDEN, J. Mar. Biol. Ass. vii.
- Cyclops salinus*, p. 7, pl. i, figg. 1-3; BRADY, Tr. Soc. Northumb. i (1): *C. leuckartii*, Natal, p. 122; BRADY, P. Zool. Soc. London 1904, ii: *C. varicans*, p. 642, fig. 14, *fimbriatus* var. *poppei*, fig. 15; SARS, Zool. Jahrb. Syst. xix.
- C. pusillus*, p. 122, pl. vi, figg. 11-18, *gibsoni*, p. 123, pl. vi, figg. 1-10, Natal; BRADY, P. Zool. Soc. London 1904, ii, **n. spp.**
- Dactylopoda*, **n. subsect.** of *Harpacticoida Chirognatha*, p. 48; SARS, Crust. Norway v.
- Diaptomus similis*, p. 502, pl. xxviii, figg. 66-71, *lobatus*, p. 504, pl. xxviii, figg. 72-76; DADAY, Zool. Jahrb. Syst. xix.
- D. steueri*, Gardasee, p. 637, 2 figg.; BREHM & ZEDERBAUER, Verh. Ges. Wien liv: *D. lehmeri*, Mexico, p. 889, text-figg. 1-4; PEARSE, Amer. Natural. xxxviii: **n. spp.**
- Ectinosoma sarsi*, p. 30, pl. xvi, *propinquum*, p. 32, pl. xvii, fig. 2, *herdmani*, p. 33, pl. xviii, fig. 2, *melaniceps*, p. 34, pl. xix, fig. 1, *normani*, p. 35, pl. xix, fig. 2, *curticorne*, p. 36, pl. xx, fig. 1, *gothiceps*, p. 37, pl. xx, fig. 2, *gracile*, p. 39, pl. xxii, fig. 1; SARS, Crust. Norway v.
- E. neglectum*, p. 31, pl. xvii, fig. 1, *elongatum*, p. 32, pl. xviii, fig. 1, *mixtum*, p. 37, pl. xxi, fig. 1, *brevirostre*, p. 38, pl. xxi, fig. 2, Norway; SARS, t. c. **n. spp.**
- Ectocyclops n. g.* (near *Cyclops*), p. 124, *rubescens*, Natal, p. 124, pl. vi, figg. 19 & 20, pl. vii, figg. 21-27; BRADY, P. Zool. Soc. London 1904, ii, **n. sp.**
- Ergasilus sieboldii*, p. 4, pl. i, figg. 20-25, *biuncinatus*, p. 11, pl. i, figg. 15-19; GADD, Acta Soc. Faun. Fenn. xxvi (8).
- Eucalanus atlanticus*, N. Atlantic, p. 113, pl. ix, figg. 3 & 4; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Euchæta norvegica*, p. 133, text-fig. 1 (3, 4 & 8), *glacialis*, p. 134, text-fig. 1 (1, 2 & 7), *barbata*, p. 135, text-fig. 1 (5, 6 & 9); WOLFENDEN, t. c.
- Euchirella carinata*, p. 115, *curticauda*, var. *atlantica*, p. 116; WOLFENDEN, t. c.
- Eudactylina minuta* (on *Trygon pastinaca*), Dornoch Firth, p. 275, pl. xvii, figg. 1-11; SCOTT, Rep. Fish. Board Scotland xxii (3), **n. sp.**
- Faroella n. g.*, *multiserrata*, N. Atlantic, p. 117, pl. ix, figg. 26-28; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Gætanus caudani* (?), p. 114, pl. ix, figg. 20-22; WOLFENDEN, t. c.
- G. major*, N. Atlantic, p. 114, pl. ix, figg. 7 & 8; WOLFENDEN, t. c. **n. sp.**
- Gaidius major*, p. 114, pl. ix, figg. 7 & 8, *pungens*, p. 131, pl. ix, fig. 43; WOLFENDEN, t. c.
- Harpacticidæ* (s. restr.), p. 48; SARS, Crust. Norway v.
- Harpacticus chelifer*, p. 6, pl. ii, figg. 9-16; BRADY, Tr. Soc. Northumb. i (1): *H. chelifer*, p. 49, pls. xxvii & xxviii, *uniremis*, p. 51, pl. xxix, *gracilis*, p. 52, pl. xxx, fig. 1, *flexus*, p. xxx, fig. 2; SARS, Crust. Norway v.
- Heteranthessius n. nom.* for *Paranthessius* T. Scott, non Claus, p. 259; SCOTT, Rep. Fish. Board Scotland xxii (3).
- Heterorhabdus longicornis*, p. 124, pl. ix, fig. 34; WOLFENDEN, J. Mar. Biol. Ass. vii.
- H. grandis*, N. Atlantic, p. 120, pl. ix, fig. 36; WOLFENDEN, t. c. **n. sp.**

- Idyida* **n. fam.** (*Hapacticoida Chirognatha*), p. 78; SARS, Crust. Norway v.
- Jeanella* **n. nom.** for *Platypsyllus* T. Scott, non Ritsema nec Westwood, p. 259; SCOTT, Rep. Fish. Board Scotland xxii (3).
- Labidocera similis*, off Karachi, p. 378, pl. xix, figg. 4-6; CLEVE, Arkiv Zool. i, **n. sp.**
- Laophonte mohammed*, identified with *Onychocamptus heteropus*, distribution, p. 246; ZYKOFF, Zool. Anz. xxviii.
- Lernæa lusci*, p. 277, pl. xvii, figg. 12 & 13; SCOTT, Rep. Fish. Board Scotland xxii (3).
- Lernæenicus sardineæ*, on Sardine, Vendée, p. 1000; BAUDOUIN, C.R. Ac. Sci. cxxxix, **n. sp.** (?)
- Lernæopoda salmonæa*, p. 28, pl. ii, figg. 13-22; GADD, Acta Soc. Faun. Fenn. xxvi (8).
- L. extumescens* (on *Coregonus* spp.), Finland, p. 31, pl. ii, figg. 1-12; GADD, t. c. **n. sp.**
- Limnocalanus grimaldii*, p. 339, text-fig. 1; ZYKOFF, Zool. Anz. xxviii.
- Lophothrix frontalis*, p. 120, pl. ix, figg. 41 & 42; WOLFENDEN, J. Mar. Biol. Ass. vii.
- L. securifrons*, N. Atlantic, p. 120, pl. ix, figg. 12-15; WOLFENDEN, t. c. **n. sp.**
- Lucicutia grandis* (?), p. 121, pl. ix, figg. 37 & 38, *magna*, p. 121, pl. ix, figg. 35 & 35a; WOLFENDEN, J. Mar. Biol. Ass. vii.
- L. maxima* [locality ?], p. 596, text-fig. 4; STEUER, Zool. Anz. xxvii: *L. atlantica*, N. Atlantic, p. 121; WOLFENDEN, J. Mar. Biol. Ass. vii: **n. spp.**
- Marænobiotus affinis*, Turkestan, p. 487, pl. xxvii, figg. 6-25; DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- Megacalanus* **n. g.**, *princeps*, N. Atlantic, p. 112, pl. ix, figg. 1 & 2; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Metridia normani*, p. 125, pl. ix, figg. 39 & 40; WOLFENDEN, t. c.
- Microsetella norvegica*, p. 44, pl. xxiv; SARS, Crust. Norway v.
- Monstrilla grandis*, p. 243, pl. xiii, figg. 11 & 12, pl. xiv, figg. 9-11, pl. xv, figg. 1 & 2, *longicornis*, p. 244, pl. xiii, figg. 1-7, *gracilicauda*, p. 245, pl. xiii, figg. 8-10, pl. xiv, fig. 15, *anglica*, p. 246, pl. xiii, fig. 13, pl. xiv, figg. 12-14; SCOTT, Rep. Fish. Board Scotland xxii (3).
- M. dubia*, Forth and Clyde, p. 247, pl. xiii, fig. 14, pl. xiv, figg. 16-18; SCOTT, t. c. **n. sp.**
- Nitocra paradoxa*, Turkestan, p. 492, figg. on pls. xxvii & xxviii; DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- Onychocamptus* [see also *Laophonte*] *heteropus*, p. 497, pl. xxviii, figg. 49-65; DADAY, t. c.
- Paracartia grani*, Norway, p. 4, pls. i-iv; SARS, Bergens Mus. Aarbog 1904, No. 4, **n. sp.**
- Paranthessius* [see *Heteranthessius*].
- Parategastes* **n. g.** (*Tegastidae*), p. 72, *sphæricus*, p. 73, pl. xliii; SARS, Crust. Norway v.
- Paraugaptilus* **n. g.**, *buchani*, N. Atlantic, p. 123, pl. ix, figg. 44 & 45; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Peltidiidae*, p. 61; SARS, Crust. Norway v.
- Peltidium purpureum*, p. 66, pls. xxxix & xl; SARS, t. c.
- Phyllopus bidentatus*, p. 124, pl. ix, fig. 16; WOLFENDEN, J. Mar. Biol. Ass. vii.
- Pionodesmotes phormosomæ* (on *Phormosoma uranus*), p. 61, pl. x; BONNIER, Res. Camp. Scient. Monaco xii.
- Platypsyllus* [see *Jeanella*].
- Pontopolites typicus*, p. 6, pl. i, figg. 4-12; BRADY, Tr. Soc. Northumb. i (1).
- Porcellidiidae* **n. fam.** (*Harpacticoida Chirognatha*), p. 74; SARS, Crust. Norway v.

- Porcellidium fimbriatum*, p. 76, pls. xlv & xlv; SARS, t. c.
Pseudetideus **n. g.** *armatus*, N. Atlantic, p. 115, pl. ix, figg. 29-31; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
Pseudobradya **n. g.** (*Ectinosomidae*), p. 40, *minor*, p. 41, pl. xxii, fig. 2, *similis*, p. 42, pl. xxiii, fig. 2; SARS, Crust. Norway v.
P. acuta, Norway, p. 41, pl. xxiii, fig. 1; SARS, t. c. **n. sp.**
Pseudodiptomus gracilis, p. 588; STINGELIN, Zool. Jahrb. Syst. xx.
Scolecithrix similis, p. 119, pl. ix, figg. 5 & 6, *atlanticus*, p. 120, N. Atlantic; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. spp.**
Sphæronella paradoxa, p. 251, pl. xv, figg. 17-19, *amphilochei*, p. 253, pl. xv, figg. 35 & 36; SCOTT, Rep. Fish. Board Scotland xxii (3).
S. norvegica, on *Rhachotropis leucophthalmus* (*Amphipoda*), Norway, p. 348, pl. xxii, figg. 1a-1g; HANSEN, Quart. J. Micr. Sci. (n. s.) xlviii: *S. minuta* (on *Periculodes longimanus*), Dornoch Firth, p. 251, pl. xv, fig. 11-15, *callisomæ* (on *Callisoma crenata*), Clyde, p. 252, pl. xv, figg. 20-27, *cluthæ* (on *Harpinia pectinata*), p. 252, pl. xv, figg. 28-30, *pygmæa* (on *Pseudocuma similis*, locality?), p. 253, pl. xv, figg. 31-34; SCOTT, Rep. Fish. Board Scotland xxii (3): **n. spp.**
Sphæronellopsis **n. g.** (*Choniostomatidae*), p. 353, *littoralis*, on *Sarsiella hispida* (*Ostracoda*), New Zealand, p. 354, pl. xxii, figg. 2a-2g; HANSEN, Quart. J. Micr. Sci. (n. s.) xlviii, **n. sp.**
Spinocalanus magnus, N. Atlantic, p. 118; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
Stenothocheres egregius, p. 250, pl. xv, figg. 5-10; SCOTT, Rep. Fish. Board Scotland xxii (3).
Tegastes falcatus, p. 69, pl. xli, *longimanus*, p. 70, pl. xlii, fig. 2; SARS, Crust. Norway v.
T. flavidus, p. 70, pl. xlii, fig. 1, *grandimanus*, p. 71, pl. xlii, fig. 3, *nanus*, p. 72, pl. xlii, fig. 4, Norway; SARS, t. c. **n. spp.**
Tegastide **n. fam.** (*Harpacticoida Chirognatha*), p. 67; SARS, t. c.
Thaumaleus thomsoni, p. 248, pl. xiv, figg. 1-4, *rigidus*, p. 248, pl. xiii, figg. 15-17, pl. xiv, fig. 19; SCOTT, Rep. Fish. Board Scotland xxii (3).
T. zetlandicus, p. 249, pl. xiii, figg. 18 & 19, pl. xiv, figg. 20-22, pl. xv, figg. 3 & 4, *rostratus*, p. 250, pl. xiv, figg. 5-8, Shetland; SCOTT, t. c. **n. spp.**
Thynnica **n. g.** (*Lernæopodidae*) *ziegleri* (on *Thynnus thynnus*), Croatia, p. 48, 3 text-figg.; MICULICICH, Zool. Anz. xxviii, **n. sp.**: identified with *Brachiella thynni*, p. 345; STENTA, t. c.
Tigriopus fulvus, p. 54, pls. xxxi & xxxii; SARS, Crust. Norway v.
Valdiviella **n. g.** (*Calanidae*) *oligarthra* [locality?], p. 593, text-figg. 1-3; STEUER, Zool. Anz. xxvii, **n. sp.**
Xanthocalanus subagilis, p. 118, pl. ix, figg. 17 & 32, *atlanticus*, p. 119, pl. ix, figg. 24, 25, 33, *cristatus*, p. 119, pl. ix, figg. 18 & 19, N. Atlantic; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. spp.**
Zaus spinatus, p. 57, pl. xxxiii, *goodsiri*, p. 59, pl. xxxv; SARS, Crust. Norway v.
Z. abbreviatus, Norway, p. 58, pl. xxxiv; SARS, t. c. **n. sp.**

3. BRANCHIURA.

[See also GADD (60), A. SCOTT (190).]

- Argulus*, p. 19, *scutiformis*, p. 20, pl. vi, figg. 32 & 33, pl. vii, figg. 34-42, *nattereri*, p. 23, pl. vii, figg. 43-52, *catostomi*, p. 25, pl. vii, figg. 53-58, *salmini*, p. 26, pl. vii, figg. 59-63, *lepidostei*, p. 27, *pugettensis*, p. 32, pl. viii, figg. 77-82, *funduli*, p. 34, *coregoni*, p. 35, pl. viii, figg. 83-87, *africanus*, p. 37, pl. viii, figg. 88-93, *japonicus*, p. 39, pl. viii, figg. 94-98, *foliaceus*, p. 40, pl. ix, figg. 99-101, *elongatus*, p. 42, pl. ix, figg.

- 102-109; THIELE, Mt. Mus. Berlin ii (4): *A. purpureus*, p. 94, pl. ii, figg. 1 & 2; RIGGIO, Natural. Sicil. xvii: *A. americanus*, structure, habits, larvæ, p. 627, text-figg. 1-21, *versicolor*, structure, p. 643, text-figg. 22-33; WILSON, P. U. S. Mus. xxvii.
- A. nobilis*, Texas, p. 28, pl. vii, figg. 64-66, pl. viii, figg. 67-76; THIELE, Mt. Mus. Berlin ii (4): *A. trilineata*, Georgia, p. 651, text-figg. 34-38; WILSON, P. U. S. Mus. xxvii: **n. spp.**
- Chonopeltis*, p. 43, *inermis*, p. 44, pl. ix, figg. 110-116; THIELE, Mt. Mus. Berlin ii (4).
- Dolops*, p. 7, *kollari*, p. 9, pl. vi, figg. 1-7, *striata*, p. 10, pl. vi, figg. 8-12, *reperta*, p. 13, pl. vi, figg. 13-15, *longicauda*, p. 14, pl. vi, figg. 16-25, *ranarum*, p. 17, pl. vi, figg. 26-31; THIELE, t. c.

4. OSTRACODA.

[See also CLEVE (43), CUNNINGTON (48), ENTZ (57), †FOX-STRANGWAYS (59), †GRABAU (67), †JUKES-BROWNE (96), †LAMPLUGH (110), LO BIANCO (116), MAR. BIOL. ASS. (125), MONTI (136), †MUNTHER (139 & 140), PAVESI (155), †RANGE (163), RICHARD (171), ULMER (224), ZACHARIAS (249).]

Revision of Danish freshwater species with keys to genera and spp., and notes on morphology and bionomics; JENSEN, Vid. Medd. 1904, pp. 1-78, pls. i-iii.

- †*Æchmina jonesi*, Silurian, Victoria, p. 308, pl. xiv, figg. 11a & b; CHAPMAN, P. Soc. Victoria xvii, **n. sp.**
- †*Aparchites subovatus*, p. 299, pl. xiv, figg. 10a-c; CHAPMAN, t. c.
- †*Argillæcia acuta*, p. 309, pl. xv, figg. 6a-c; CHAPMAN, t. c.
- A. propinqua*, off Alhmouth, p. 7, pl. ii, figg. 1-8; BRADY, Tr. Soc. Northumb. i (1), **n. sp.**
- †*Bythocypris holli*, p. 310, pl. xiv, figg. 9a & b, pl. iv, figg. 1a-c, 2a-c, *caudalis*, p. 311, pl. xv, figg. 7a-c, *phaseolus* var. *elongata*, p. 311, pl. xv, figg. 5a & b; CHAPMAN, P. Soc. Victoria xvii: †*B. simulata*, p. 233, pl. xxix, fig. 20; CHAPMAN, Ann. S. African Mus. iv (5).
- †*Ctenobolbina ciliata*, p. 575, pl. ii, figg. 8 & 9, var. *cornuta* **n. var.**, p. 575, pl. ii, figg. 5-7; RUEDEMANN, Rep. N. York Mus. liv (3).
- †*C. subrotunda*, Trenton shales, New York, p. 576, pl. ii, figg. 1-4; RUEDEMANN, t. c. **n. sp.**
- Cypria castanea*, Natal, p. 125, pl. vii, figg. 40-42, pl. viii, fig. 43; BRADY, P. Zool. Soc. London 1904, ii, **n. sp.**
- †*Cypridina antiqua*, Ordovician (?), Canada, p. 438, text-fig. 1; JONES, Geol. Mag. (5) i, **n. sp.**
- Cypris ornata*, Britain, p. 126, pl. vii, fig. 39; BRADY, P. Zool. Soc. London 1904, ii.
- C. inermis*, p. 125, pl. viii, figg. 44-49, *aratra*, p. 125, pl. vii, figg. 34-38, Natal; BRADY, t. c. **n. spp.**
- †*Cyprosina* sp., p. 312, pl. xvi, fig. 4, pl. xvii, fig. 1; CHAPMAN, P. Soc. Victoria xvii.
- †*Cythere drupacea* var. *fortior* **n. var.**, p. 199, pl. xxiii, figg. 3a, b, *corrosa* var. *grosseopunctata* **n. var.**, p. 200, pl. xxiii, figg. 5a, b; CHAPMAN, op. cit. xvi.
- †*C. lobulata*, Jurassic, W. Australia, p. 199, pl. xxiii, figg. 4a, b; CHAPMAN, t. c.: †*C. clarkana*, p. 98, pl. xxxv, figg. 1-10, var. *minuscule* **n. var.**, p. 99, pl. xxxv, figg. 11-14, *planibasalis*, p. 99, pl. xxxviii, figg. 1-3, *calverti*, p. 100, pl. xxxviii, figg. 11-13, *inequivalvis*, p. 101, pl. xxxv, figg. 15-17, *plebeia*, p. 102, pl. xxxv, figg. 20-29, var. *modica* **n. var.**, p. 103, pl. xxxv, figg. 18 & 19, var. *capax* **n. var.**, p. 103, pl. xxxv,

- figg. 30-33, *burnsi*, p. 103, pl. xxxvi, figg. 34-39, *paucipunctata*, p. 105, pl. xxxviii, figg. 7-9, *tuomeyi*, p. 105, pl. xxxviii, figg. 4-6, *porcella*, p. 106, pl. xxxvi, figg. 26-33, *nitidula*, pl. xxxvi, figg. 21-23, var. *calvertensis* **n. var.**, p. 108, pl. xxxvi, figg. 24 & 25, *punctistriata*, p. 108, pl. xxxviii, figg. 22-24, *vaughani*, p. 109, pl. xxxviii, figg. 25-27, *francisca*, p. 110, pl. xxxviii, figg. 19-21, *subovalis*, p. 111, pl. xxxviii, figg. 14 & 15, *martini*, p. 112, pl. xxxvi, figg. 11-15, *dorsicornis*, p. 113, pl. xxxvi, fig. 16, var. *bicornis* **n. var.**, p. 114, pl. xxxviii, figg. 32 & 33, *lienenklausi*, p. 114, pl. xxxviii, fig. 31, *producta*, p. 115, pl. xxxvi, fig. 17, pl. xxxviii, figg. 28-30, *micula*, p. 116, pl. xxxvi, figg. 18-20, *exanthemata*, p. 117, pl. xxxvi, figg. 1-5, *rugipunctata*, p. 118, pl. xxxviii, figg. 16 & 17, *evax*, p. 119, pl. xxxvi, figg. 6-8, var. *oblongula* **n. var.**, p. 119, pl. xxxvi, figg. 9 & 10, *spiniplicata*, p. 120, pl. xxxviii, fig. 18, *shattucki*, p. 121, pl. xxxviii, fig. 10, Miocene, Maryland ; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904 : **n. spp.**
- Cythereis sicula*, p. 525, pl. xxx, figg. 123-142 ; DADAY, Zool. Jahrb. Syst. xix : †*C. cornuta* var. *americana* **n. var.**, p. 122, pl. xxxvii, figg. 29-33 ; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904.
- †*C. alaris*, Miocene, Maryland, p. 123, pl. xxxviii, figg. 34-36 ; ULRICH & BASSLER, t. c. **n. sp.**
- †*Cytheridea longicaudata*, Cretaceous, Pondoland, p. 234, pl. xxix, fig. 21 ; CHAPMAN, Ann. S. African Mus. iv (5) : †*C. subovata*, p. 124, pl. xxxvii, figg. 1-8, *chesapeakensis*, p. 125, pl. xxxvii, fig. 9, Miocene, Maryland ; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904 : **n. spp.**
- †*Cytherideis ashermani*, p. 126, pl. xxxvii, figg. 10-16, *cylindrica*, p. 126, pl. xxxvii, fig. 17, *subæqualis*, p. 127, pl. xxxvii, fig. 28, *semicircularis*, p. xxxvii, figg. 18-20, *longula*, p. 128, pl. xxxvii, figg. 21-27 ; ULRICH & BASSLER, t. c. **n. spp.**
- †*Cytheropteron australiense*, Jurassic, W. Australia, p. 203, pl. xxiii, figg. 7a, b ; CHAPMAN, P. Soc. Victoria xvi : †*C. elongato-concentricum*, Cretaceous, Pondoland, p. 235, pl. xxix, figg. 23, 23a ; CHAPMAN, Ann. S. African Mus. iv (5) : †*C. nodosum*, Miocene, Maryland, p. 129, pl. xxxviii, figg. 37-40 ; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904 : **n. spp.**
- Eucandona stummeri*, Turkestan, p. 515, pl. xxix, figg. 98-111 ; DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- †*Isochilina labrosa*, p. 299, pl. xvi, figg. 3a, b ; CHAPMAN, P. Soc. Victoria xvii.
- Limnocythere dubiosa*, p. 521, figg. on pls. xxix & xxx, 5 text-figg. ; DADAY, Zool. Jahrb. Syst. xix.
- †*Loxoconcha elongata*, p. 200, pl. xxiii, figg. 2a, b, *jurassica*, p. 201, pl. xxiii, figg. 6a, b, Jurassic, W. Australia ; CHAPMAN, P. Soc. Victoria xvi, **n. spp.**
- †*Macrocypris simplex*, p. 233, pl. xxix, figg. 22a, b ; CHAPMAN, Ann. S. African Mus. iv (5) : †*M. vinei* (?), p. 310, pl. xiv, figg. 7a-c ; CHAPMAN, P. Soc. Victoria xvii.
- †*M. flexuosa*, Silurian, Victoria, p. 309, pl. xiii, fig. 6 ; CHAPMAN, t. c. **n. sp.**
- †*Paradoxorhyncha* **n. g.** (near *Cytheropteron*), p. 202, *foveolata*, Jurassic, W. Australia, p. 202, pl. xxiii, figg. 1a, b ; CHAPMAN, op. cit. xvi, **n. sp.**
- Potamocypris almásyi*, Turkestan, p. 519, pl. xxix, figg. 89-97 : DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- †*Primitia trigonalis*, p. 300, pl. xv, figg. 8a-c, *punctata*, p. 301, pl. xiii, figg. 2a-c, *matutina*, p. 302, pl. xiii, figg. 5a-b, *retieristata*, p. 303, pl. xiii, figg. 7a-c, *obsoleta*, p. 303, pl. xiii, figg. 8a-c, *elongata* var. *nuda*, p. 304, pl. xiv, figg. 3a-c, *paucipunctata*, p. 305, pl. xiv, figg.

- 4a-c, pl. xv, figg. 2a-c, *striata*, p. 305, pl. xv, figg. 3a-c, *semicircularis*, p. 306, pl. xv, figg. 4a-c, *unicornis*, p. 306, pl. xv, figg. 6a & b ; CHAPMAN, P. Soc. Victoria xvii.
- +*P. subtrigonalis*, p. 301, pl. xiii, figg. 1a-c, *semicultrata*, p. 301, pl. xiii, figg. 4a-c, *halli*, p. 304, pl. xiv, figg. 2a-c, Silurian, Victoria ; CHAPMAN, t. c. **n. spp.**
- Stenocypris chevreuxii*, Britain, p. 127, pl. viii, figg. 58-62 ; BRADY, P. Zool. Soc. London 1904, ii.
- S. perarmata*, Natal, p. 126, pl. viii, figg. 50-57 ; BRADY, t. c. **n. sp.**
- +*Xestoleberis wrightii* var. *oblonga* **n. var.**, p. 308, pl. xv, figg. 1a & b ; CHAPMAN, P. Soc. Victoria xvii.
- +*X. holliana*, p. 306, pl. xiii, figg. 3a-c, *lilydalensis*, p. 307, pl. xiv, figg. 1a-c, 5a-c, 8a, b, Silurian, Victoria ; CHAPMAN, t. c. **n. spp.**

5. CIRRIPEDIA.

[See also +COUFFON (45), +DENNANT & KITSON (52), +FOX-STRANGWAYS (59), GRUVEL (72-75), +HOLMES (90), +JUKES-BROWNE (96), MAR. BIOL. ASS. (125), NOBRE (145), PATIENCE (152), STEAD (205).]

Revision of Cirripedia with figg. and descr. of all recent spp. ; GRUVEL, Monogr. Cirrhipèdes.

Thecostraca **n. nom.** for *Cirripedia* ; GRUVEL, t. c.

Acrothoracica **n. nom.** for *Abdominalia* Darwin ; GRUVEL, t. c.

Alcippe lampas, anatomy ; GENTHE, Zool. Jahrb. Syst. xxi, pp. 181-200, pls. xi & xii.

Balanus sp., in nearly fresh water, Norfolk, p. 645 ; GURNEY, Tr. Norfolk Soc. vii : +*B. concavus*, Miocene, p. 293, text-figg. 1-3 ; CUSHMAN, Amer. Geol. xxxiv : +*B. concavus*, p. 94, pls. xxxiii & xxxiv ; MARTIN, Maryland Geol. Survey, Miocene, 1904 : +*B. sp.*, Miocene, S. Russia, p. 72, pl. iv, figg. 51-54 ; MIKHAILOVSKY, Trudui geol. Kom. xiii.

Lepas pectinata, Cypris stage, p. 42, text-figg. 3-7 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x.

Pæcilasma aurantium, anatomy and later larval stages ; HOFFENDAHL, Zool. Jahrb. Anat. xx, pp. 363-398, pls. xxiii-xxvi.

+*Pollicipes siluricus*, Utica shale, New York, p. 578, pl. ii, figg. 16-24 ; RUEDEMANN, Rep. N. York Mus. liv (3), **n. sp.**

Proteolepas hansenii (descr. from larvæ), Trieste, p. 228 ; STEUER, Zool. Anz. xxviii, **n. sp.**

Sacculina carcini, early stages of development ; ABRIC, C.R. Ac. Sci. cxxxix, pp. 430-432.

Scalpellum pollicipedoides, near Jedan Ids., p. 92, figg. 4-6, *aries* (not descr.), p. 92 ; HOEK, P. Ak. Amsterdam vii, **n. spp.**

+*Turrilepas* (?) *filosus*, Utica shale, New York, p. 577, pl. ii, figg. 13-15 ; RUEDEMANN, Rep. N. York Mus. liv (3), **n. sp.**

GIGANTOSTRACA

(XIPHOSURA, TRILOBITA, EURYPTERIDA).

I. TITLES.

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3. BOLTON, H. The Palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii, pp. 378-415 & 578-650.
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II. SUBJECT-INDEX.

Physiology of heart in *Limulus* ; CARLSON (4).
 Bicaudate abnormality in *Limulus* ; SMITH (24).
 Telson of undetermined Gigantostracan found in burial place of Bronze Age ; GRIFFITH (12).
Palæoblattina douvillei, described as an Insect, is part of an Asaphid Trilobite ; AGNUS (1).

III. DISTRIBUTION.

Jurassic, Solnhofen Limestones, *Limulus* ; WALTHER (27).
 Palæozoic, Niagara region, *Trilobita* and *Eurypterida* ; GRABAU (11).
 Permian, Kansas, *Prestwichia*, n. sp. ; BEECHER (2).
 Carboniferous, Lower Culm, Devonshire, *Trilobita* ; HIND (15) : Culm, Sarajevo, *Trilobita*, n. sp. ; KITTL (17) : Culm, S. Germany, *Trilobita* ; PARKINSON (20) : Coal Measures, Lancashire, *Xiphosura* ; BOLTON (3).
 Devonian, Cornwall, *Trilobita* ; FOX (10) : Couvin, *Trilobita*, n. sp. ; MAILLEUX (18) : Moravia, *Trilobita* ; SMYČKA (25) : Upper Devonian, Condroz, *Eurypterida* ; DESTINEZ (7) : Middle Devonian, "Iberger kalk," *Trilobita* ; HARBORT (13).
 Silurian and Cambrian, Kinnekulle, Sweden, *Trilobita* ; HOLM (16).
 Silurian, *Trilobita* ; WALCOTT (26) : Haverfordwest, *Trilobita*, n. sp. ; REED (22) : Haverfordwest, *Trilobita* ; REED (23) : Silurian, Girvan, Ayrshire, *Trilobita*, n. spp. ; REED (21) : Gothland, *Trilobita*, *Eurypterida* ;

MUNTHE (19): Silurian, Spiti, Himalayas, *Trilobita*; HAYDEN (14): Upper Silurian or Old Red Sandstone, undetermined Gigantostracan; GRIFFITH (12): Lower Silurian, Venezuela, *Trilobita*, n. sp.; DREVERMANN (8): Salina, New York, *Xiphosura*, n. sp.; CLARKE (5).

Cambrian, Portugal, *Trilobita*, n. spp.; DELGADO (6): Spiti, Himalayas, *Trilobita*; HAYDEN (14): Cambrian (?), Tasmania, *Trilobita*, n. sp.; ETHERIDGE (9).

IV. SYSTEMATIC.

XIPHOSURA.

[See also +BOLTON (3), +WALTHER (27).]

Limulus, physiology of heart; CARLSON, Amer. J. Physiol. xii, pp. 67-74, 1 text-fig.: *L. polyphemus*, abnormal specimen; SMITH, Tufts Coll. Stud. No. 8, pp. 379-382, 1 text-fig.

+*Prestwichia signata*, Permian, Kansas, p. 23, fig. 1; BEECHER, Amer. J. Sci. (4) xviii, n. sp.

+*Pseudoniscus roosevelti*, Salina, New York, p. 89, pls. i & ii, figg. 1-3; CLARKE, Rep. N. York Mus. liv (1), n. sp.

+TRILOBITA.

[See also AGNUS (1), GRABAU (11), HAYDEN (14), HIND (15), HOLM (16), MUNTHE (19), PARKINSON (20).]

Acidaspis pigra, p. 477, pl. xxiii, figg. 1, 1a-c; HARBORT, Zeitschr. Deutsch. geol. Ges. lv (4).

Arethusina konincki, p. 83, pl. xi, figg. 14 & 15; REED, Tril. Girvan ii.

Asaphus sp., p. 49, pl. vii, fig. 9; REED, t. c.: *A. (Isotelus) emoryi*, type specimen re-figured; WALCOTT, Pal. Univ. Fasc. ii, pl. 28.

Bohemilla sp., p. 53, pl. viii, fig. 4; REED, Tril. Girvan ii.

Bronteopsis scotica, p. 94, pl. xiii, figg. 5-13; REED, t. c.

B. ardmillanensis, Silurian, Ayrshire, p. 92, pl. xiii, figg. 1-4; REED, t. c. n. sp.

Bronteus granulatus, p. 483, pl. xxiv, figg. 1-7, *flabellifer*, p. xxiv, fig. 8; HARBORT, Zeitschr. Deutsch. geol. Ges. lv (4): *B. andersoni*, p. 87, pl. xii, figg. 8-11, sp. ind. p. 91, pl. xii, fig. 15, sp. ind. p. 91, pl. xii, fig. 16; REED, Tril. Girvan ii.

B. craigensis, p. 89, pl. xii, figg. 12 & 13, *grayi*, p. 90, pl. xii, fig. 14, Silurian, Ayrshire; REED, t. c. n. spp.

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Cyphaspis ceratophthalma, p. 479, pl. xxiii, figg. 3, 3a, 4, 4a, 5, 5a-c, *convexa*, p. 482, pl. xxiii, figg. 2, 2a-c; HARBORT, Zeitschr. Deutsch. geol. Ges. lv (4): *C. megalops*, p. 82; REED, Tril. Girvan ii.

Dikelocephalus florentinensis, Cambrian (?), Tasmania, p. 25, pl. x, fig. 4; ETHERIDGE, Rec. Austral. Mus. v (2), n. sp.

Encrinurus multisegmentatus, p. 387, pl. xii, fig. 5; REED, Geol. Mag. (5) i.

Hicksia n. g. (near *Liostracus*), p. 327, *elvensis*, p. 333, figg. on pls. i, ii, iv & v, *spherica*, p. 335, figg. on pls. i-vi, *transtaganensis*, p. 337, figg. on pls. i, ii, v, vi, *walcotti*, p. 338, figg. on pls. ii-v, *castroi*, p. 340, figg. on pls. i, v, vi, *hughesi*, p. 341, figg. on pls. ii, v, vi, *barroisi*, p. 342, figg. on pl. ii, *devalquei*, p. 343, figg. on pls. i, ii, v, *minuta*, p. 344, figg. on pls. ii & v, Cambrian, Portugal; DELGADO, Commun. geol. Portugal v, n. spp.

- Homalonotus barratti*, p. 753, text-fig. ; Fox, Tr. geol. Soc. Cornwall xii.
- Illænus æmulus*, p. 54, pl. viii, fig. 5, var. p. 55, pl. viii, figg. 6–11, *barriensis*, p. 58, pl. ix, figg. 1 & 2, *bowmani*, p. 59, var. *longicapitatus*, p. 60, *davisi*, p. 60, *latus*, p. 63, pl. ix, figg. 6 & 7, *macallumi*, p. 65, pl. ix, figg. 8 & 9, *murchisoni*, p. 65, pl. ix, figg. 10 & 12, *nexilis*, p. 66, pl. ix, fig. 13, *portlocki*, p. 67, pl. ix, figg. 14 & 16, pl. x, figg. 1 & 1a, *thomsoni*, p. 70, pl. x, figg. 6–8, sp., cf. *oculosus*, p. 71, pl. x, figg. 9–11, sp., cf. *perovalis*, p. 72, pl. x, fig. 12, sp. ind. p. 73, pl. x, fig. 13 ; REED, Tril. Girvan ii.
- I. balclatchiensis*, p. 56, pl. viii, figg. 12–16, *extensus*, p. 61, pl. ix, figg. 3–5, *shallochensis*, p. 68, pl. x, figg. 2–5, Silurian, Ayrshire ; REED, t. c. **n. spp.**
- Lichas* (*Corydocephalus*) *anglicus*, p. 95, *geikiei*, p. 96, pl. xiii, figg. 14, 14a, pl. xiv, fig. 1 ; REED, t. c.
- Menocephalus*? (*Tornquistia*) sp., cf. *nicholsoni*, p. 86, pl. xii, figg. 3–7 ; REED, t. c.
- Metadoxides bornemanni*, p. 345, pl. iii, fig. 33, pl. vi, fig. 1 ; DELGADO, Commun. geol. Portugal v.
- Microdiscus caudatus*, p. 349, figg. on pls. iii & v, *subcaudatus*, p. 350, figg. on pls. iii & v, *wenceslasi*, p. 350, figg. on pls. iii & v, *souzaei*, p. 351, figg. on pls. iii & v, *woodwardi*, p. 353, figg. on pls. iii & v, Cambrian, Portugal ; DELGADO, t. c. **n. spp.**
- Niobe* sp., p. 26, pl. x, figg. 1–3 ; ETHERIDGE, Rec. Austral. Mus. v (2).
- Olenellus* sp., p. 325, pl. iv, fig. 9, pl. v, fig. 9 ; DELGADO, Commun. geol. Portugal v.
- O. macphersoni*, Cambrian, Portugal, p. 347, figg. on pls. iv–vi ; DELGADO, t. c. **n. sp.**
- Olenopsis* sp., p. 325, pl. i, fig. 8 ; DELGADO, t. c.
- Paradoxides*, aff. *abenacus*, p. 322, pl. i, fig. 10, pl. v, fig. 35, aff. *spinosus*, p. 323, pl. i, figg. 4 & 12, aff. *tessini*, p. 324, pl. i, figg. 7 & 9, pl. vi, fig. 5 ; DELGADO, t. c.
- P. choffati*, p. 319, pl. i, figg. 1–3, 16, pl. v, fig. 3, *costæ*, p. 323, pl. i, figg. 5, 6, 11, Cambrian, Portugal ; DELGADO, t. c. **n. spp.**
- Phacops* (*Dalmanites*) *socialis*, p. 383, pl. xii, fig. 2, aff. *incertus*, p. 384, pl. xii, fig. 4 (*Chasmops*) *conicophthalmus*, p. 385, pl. xii, fig. 1, *macroura* (?), p. 386, pl. xii, fig. 3 ; REED, Geol. Mag. (5) i.
- P. robertsi*, (?) Silurian, Haverfordwest, p. 106, pl. v ; REED, t. c. **n. sp.**
- Phillipsia bittneri*, Culm, Sarajevo, p. 680, pl. xxi, figg. 30–32 ; KITTL, Jahrb. geol. Reichsanst. liii, **n. sp.**
- Phillipsinella parabola*, p. 85, pl. xii, figg. 1, 1a, 2 ; REED, Tril. Girvan ii.
- Proetus girvanensis*, p. 74, pl. xi, figg. 1–3, *latifrons*, p. 76, pl. xi, figg. 4 & 4a, *procerus*, p. 77, pl. xi, figg. 5, 6, 6a, *stokesi*, p. 79, pl. xi, figg. 10 & 11, sp., cf. *obconicus*, p. 81, pl. xi, fig. 12, sp. ind. pl. xi, fig. 13 ; REED, Tril. Girvan ii : *P. celechovicensis*, p. 63, pl. i, figg. 1–3 ; SMYČKA, Vestník Klub. Prostejove vii.
- P. barroisi*, Devonian, Couvin, p. 581, text-figg. a–d ; MAILLEUX, Bull. Soc. Belge Geol. xvii, Pr.-verb. : *P. pseudolatifrons*, Silurian, Ayrshire, p. 78, pl. xi, figg. 7–9 ; REED, Tril. Girvan ii : **n. spp.**
- Stygina latifrons*, p. 50, pl. vii, fig. 10 ; REED, t. c.

†EURYPTERIDA.

[See DESTINEZ (7), GRABAU (11), MUNTHE (19).]

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Morphology and Classification of Pycnogonida; LANKESTER & POCOCK (4).
Morphology of proboscis in *Pipetta* and other *Pycnogonida*; LOMAN (6).
Morphology of *Pentanympheon*; HODGSON (3).
Regeneration in *Phoxichilidium*; MORGAN (8).

III. DISTRIBUTION.

- Plymouth, Pycnogonida; MAR. BIOL. ASS. (7).
 Portugal, Pycnogonida; NOBRE (9).
 South Africa, Pycnogonida, n. spp.; LOMAN (5).
 Ceylon, Pycnogonida, n. spp.; CARPENTER (1).
 Banda Sea, Pycnogonida, n. sp.; LOMAN (6).
 N. W. America, California to Bering Sea, Pycnogonida, n. spp.;
 COLE (2).
 Antarctic, McMurdo Bay, Pycnogonida, n. sp.; HODGSON (3).

IV. SYSTEMATIC.

- Ammothea latifrons*, Bering Sea, p. 263, pl. xi, fig. 3, pl. xvi, figg. 1-9, pl. xvii, figg. 1-3, *alaskensis*, Alaska, p. 266, pl. xii, fig. 4, pl. xvii, figg. 4-12, *gracilipes*, California, p. 269, pl. xii, fig. 5, pl. xviii, figg. 1-6, *pribilofensis*, Bering Sea, p. 270, pl. xii, fig. 6, pl. xviii, figg. 7 & 8, pl. xix, figg. 1-8; COLE, Harriman Alaska Exp. x: *A. brevicauda*, Port Elizabeth, p. 376, pl. xiv, figg. 1-4; LOMAN, Zool. Jahrb. Syst. xx : **n. spp.**
- Ammothella tuberculata*, N. California, p. 273, pl. xii, fig. 7, pl. xx, figg. 1-6, *spinifera*, p. 275, pl. xii, fig. 8, pl. xx, figg. 7-9, pl. xxi, figg. 1-6; COLE, Harriman Alaska Exp. x, **n. spp.**
- Anoplodactylus erectus*, California, p. 289, pl. xiv, fig. 12, pl. xxvi, figg. 1-9; COLE, t. c. **n. sp.**
- Clotenia occidentalis*, California, p. 281, pl. xiii, fig. 9, pl. xxiii, figg. 4-8; COLE, t. c. **n. sp.**
- Discoarachne brevipes*, p. 379, pl. xiv, figg. 7-11; LOMAN, Zool. Jahrb. Syst. xx.
- Halosoma n. g.*, p. 286, *viridintestinalis*, California, p. 286, pl. xiv, fig. 11, pl. xxiv, figg. 6-8, pl. xxv, figg. 1-4; COLE, Harriman Alaska Exp. x, **n. sp.**
- Hannonia typica*, p. 383, pl. xiv, figg. 12-15; LOMAN, Zool. Jahrb. Syst. xx.
- Lecythorhynchus marginatus*, California, p. 260, pl. xi, figg. 1 & 2, pl. xv, figg. 1-8; COLE, Harriman Alaska Exp. x, **n. sp.**
- Nymphon longicaudatum*, Ceylon, p. 183, figg. 8-14; CARPENTER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
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- Phoxichilidium femoratum*, p. 283, pl. xiii, fig. 10, pl. xxiv, figg. 1-5; COLE, Harriman Alaska Exp. x: *P. maxillare*, regeneration, p. 163, 3 text-figg.; MORGAN, Biol. Bull. vi.
- Phoxichilus mollis*, Ceylon, p. 182, figg. 1-7; CARPENTER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Pipetta n. g.*, p. 264, *weberi*, Banda Sea, 2081 metres, p. 264, text-fig. 7; LOMAN, Tijdschr. Nederland. Dierk. Ver. (2) viii, **n. sp.**
- Pycnogonum stearnsi*, p. 292, pl. xiv, figg. 13-15, pl. xxvi, fig. 10; COLE, Harriman Alaska Exp. x.
- P. microps*, Natal, p. 378, pl. xiv, figg. 5 & 6; LOMAN, Zool. Jahrb. Syst. xx, **n. sp.**
- Tanystylum intermedium*, California, p. 278, pl. xxi, figg. 7-9, pl. xxii, figg. 1-7, pl. xxiii, figg. 1-3; COLE, Harriman Alaska Exp. x, **n. sp.**

XI. ARACHNIDA

(Including TARDIGRADA AND PENTASTOMIDA).

BY

EUGÈNE SIMON.

CONTENTS.

	Page		Page
I. TITLES	2	Aviculariidae	21
II. BIOLOGY.		Hypochilidae	21
1. Anatomy and Physiology	13	Uloboridae	22
2. Reproduction and Development	14	Dictynidae	22
3. General Bionomics, Habits, &c.	14	Eresidae	22
4. Symbiosis and Parasitism	14	Filistatidae	22
5. Miscellaneous	15	Leptonetidae	23
III. DISTRIBUTION.		Oonopidae	23
A. Geographical		Sicariidae	23
1. Europe and Mediterranean Islands	15	Dysderidae	23
2. Africa	16	Caponiidae	23
3. Asia	16	Prodidomidae	24
4. Malay Archipelago	16	Drassidae	24
5. Australia and Pacific Islands	16	Zodariidae	25
6. North America	16	Hersiliidae	25
7. Central and South America	17	Pholcidae	25
B. Geological	17	Theridiidae	25
IV. SYSTEMATIC.		Argiopidae	26
Arachnida, general	17	Mimetidae	30
1. Scorpiones	18	Thomisidae	31
2. Pedipalpi	20	Clubionidae	31
3. Palpigradi	20	Agelenidae	32
4. Araneae	20	Pisauridae	33
		Lycosidae	33
		Oxyopidae	35
		Salticidae	35
		5. Solifugae	36
		6. Chernetes (Pseudoscorpiones)	36
		7. Opiliones	37
		8. Ricinuli	39
		9. Acari	39
		10. Tardigrada	49
		11. Pentastomida [vacant]	

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II. BIOLOGY.

1. *Anatomy and Physiology.*

General morphology, anatomy and classification of Arachnoidea; LANKESTER (100, 101).

The muscle insertions in Arachnida; R. H. STAMM (198).

On the anatomy and embryology of the nervous system of the Scorpion; McCLENDON (120).

On a new stridulating organ, Scorpion; R. I. POCKOCK (157).

Morphology and anatomy of Pedipalpi; C. BÖRNER (35).

Phagocytose in *Thelyphonus*; C. DAWYDOFF (56).

The heart and circulation in Spiders; T. FRANZ (69).

The sham-death reflex in Spiders; T. ROBERTSON (176).

The function of the accessory chromosome in the Spiders; LOUISE R. WALLACE (222).

Structure and classification of Spiders, introductory sketch; THOMSON (202).

Stridulating organs in Theridiidæ; W. KULCZYNSKI (96).

On the lateral organs in the Solifugæ; R. HEYMONS (86).

Morphology of Opiliones Cyphophthalmi, and Ricinuli; H. J. HANSEN & W. SØRENSEN (82).

Observations on hearing and smell in Spiders; H. PRITCHETT (160).

Hæmocyanin in *Arachnida*; KOBERT, p. xxiii, SB. Ges. Rostock 1903.

2. *Reproduction and Development.*

- The vitelline body in spiders' eggs; NADINE NOWLIN (140).
 Copulation of *Epeira*; P. WESTBERG (227).
 Development of *Galeodes araneoides*; A. BIRULA (29).
 Embryology of *Scorpio indicus*; POLJANSKY (159).
 Embryology of *Thelyphonidæ*; SCHIMKEWITSCH (183).
 Metamorphosis, age and sexual characters in Opiliones; W. KULCZYNSKI (95).
 Metamorphosis of Hydrachnidæ; C. PEREZ (152).
 Fecundation in Sarcopitidæ and Tyroglyphidæ; E. TROUESSART (216).
 Metamorphosis of *Trichotarsus*; E. TROUESSART (214 & 215).
 Eggs of Tardigrada; F. RICHTERS (171).

3. *General Bionomics, Habitats, &c.*

- Habits of Spiders and bibliographical list of works on this subject; A. NOSEK (138).
 Habits of several Spiders and of one Scorpion of S. France: la Lycose de Narbonne (*Lycosa narbonensis*), p. 5; l'exode des Araignées, p. 49; l'Araignée Crabe (*Thomisus albus* Gm.), p. 68; les Epeires, p. 79; l'Araignée labyrinthe (*Agelena labyrinthica*), p. 192; l'Araignée Clotho (*Uroctea durandi* Latr.), p. 213; le Scorpion languedocien (*Buthus occitanus*), p. 223; J. H. FABRE (66-68).
 Architecture nesting, habits and life history of Australian Araneidæ; W. J. RAINBOW (163).
 Fabrication of Spiders' webs (Orbitelæ); AD. LENDL (111).
 Biology and psychology of *Chiracanthium carnifex*; LÉCAILLON (107).
 Relations between *Theridion* with their egg-cocoons; LÉCAILLON (108).
Theridion with their egg-cocoons, with the cocoons of other species and with artificial cocoons; LÉCAILLON (109).
 Spiders and their egg-cocoons and young; LÉCAILLON (110).
 Habits of *Linyphia* on their web; OSWALD H. LATTE (103).
 Hunting of one Spider; H. DU BUYSSON (59).
 Egg-cocoons of *Hyptiotes cavatus* and *Theridiosoma gemmosum*; T. W. SCHEFFER (180 & 181).
 Nest of *Spiroctenus pallidipes* Purcell and *pectiniger* E. Sim., figured; W. F. PURCELL (161).
 Habits of *Ectatosticta troglodytes* Higg. & Pett., a cave-spider of Tasmania; W. J. RAINBOW (164).
 Habits and biology of *Ixodes*; P. MEGNIN (123).
 Lemon, "ruginé bianca" and *Acarina*; CAVARA & MOLLI (41).
Glyciphagus spinipes and *G. ansor* infesting furniture; RANKIN (165).
Eriophyes ribis in England; COLLINGE (46).

4. *Symbiosis and Parasitism.*

- Symbiosis between *Greenia* and *Coptorthosoma* (Xylocopidæ); A. C. OUDEMANS (142).
 Symbiosis between Bees and Mites; GREEN & PERKINS (76).
 Thrombidion parasitic on man; F. HEIM & OUDEMANS (83).
 Acari parasitic on rats; G. TIRABOSCHI (209).
 Acari parasitic on *Arctomys marmota*; E. TROUESSART (213).
 Acari parasitic on *Tragulus meminna*; L. LAVARRA (104).
 Acari and *Anopheles*; H. GROS & LAVERAN (78 & 105).
 Acari commensal in Ants' nests; A. BERLESE (20 & 21).

Animals propagators of the bubonic plague (Acari, p. 96); G. TIRABOSCHI (208).

Tick and cattle fever in S. Africa; W. ROBERTSON (174 & 175); LOUNSBURY (114-119); R. KOCH (90-92); MULLY (121); THEILER (200); CHRISTY (45).

Galls of *Phytoptus*; MELVILLE THURTON COOK (124).

Galls of *Phytoptus* on *Aronia rotundifolia*; M. BEZZI (24).

Acari commensal in Eriophyes galls; STEGANO (196).

5. Miscellaneous.

The silk of *Nephila madagascariensis* for economic use; ERDMANN (64 & 65); O. WITT (235); C. LABONNEFON (98); X. GILLOT (74); ACLOQUE (3 & 4); NOGUÉ (135).

Mythological and historical animals "l'Araignée": E. N. SANTINI DE RIOIS (178).

Venom of Spiders; W. H. WILSON (230, 232-234). On the venom of Scorpions and immunity of certain desert mammals to Scorpion venom; W. H. WILSON (233).

Change of marking in the male of *Pellenes cristatus*; EMERTON (62).

On the coloration of Spiders; LATTE, H. OSWALD (103).

On the collection of Spiders and conservation of spiders' webs; H. DESMAISONS (57).

On the supposed suicide of the Scorpion; GALIEN MINGAUD (126).

Bryobia Mite, remedy for the Red Spider pest; LOUNSBURY, C. P. (115).

An abnormal female of *Edothorax agrestis*; R. DE LESSERT (112).

Means of destruction for *Tetranychus telarius*; P. NOEL (134), and for "Red spider"; COSTANTIN, GÉROME & LABROY (50).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

1. Europe and Mediterranean Islands.

Central Europe. *Araneæ*, keys to families and genera; NOSEK (137).

Denmark, Færoe Isl. and Iceland. *Araneæ*, list and keys to families, genera and spp.; W. SORENSSEN (193).

Norway. *Araneæ*, list and n. spp.; E. STRAND (197 & 198): *Chernetes*; ELLINGSEN, EDV. (60): *Bdellidæ* (Acari); THOR, SIG. (204). Norway Sept. and Spitzberg. *Tardigrada*, list and n. spp.; F. RICHTERS (169).

Russia. *Scorpiones*, synop. key to genera and spp.; BIRULA (28): Sosva, *Hydrachnidæ*; PIERSIG, R. (156): Caucasian reg. *Araneæ*; WERJBITSKY (226).

Iceland. *Tardigrada*; RICHTERS, F. (173).

Germany. *Araneæ* (note on some Spiders of Germany fauna); KULCZYNSKI (96). Bremen, *Acari*; VOIGTS (220). Hamburg, *Hydrachnidæ*, list of spp.; ULMER (218).

France. *Trombidion* n. spp.; HEIM & OUDEMANS (83 & 84): Padirac cave fauna *Arachnida*; A. VIRÉ (219).

Holland. *Arrenurus* n. spp.; KAENIKE (93): On *Azalea indica*, *Phyllocoptes* n. sp.; NALEPA (131).

Belgium. *Hydrachnidæ*; ROUSSEAU (177).

England. *Chernetes* (in Ayrshire); PERCY H. GRIMSHAW (77): *Chernes nodosus* (at Louth); H. W. KEW (89): *Araneæ* (in Epping Forest); F. P. SMITH (190): *Oribatidæ* (Acari); C. WARBURTON & PEARCE (225): *Hydrachnidæ*; C. R. SOAR (192); C. F. GEORGE (73).

- Ireland. *Araneæ* and *Opiliones*; G. H. CARPENTER (40): *Hydrachnidæ* n. sp.; J. N. HALBERT (79 & 80).
 Switzerland. Bassin du Léman *Araneæ*, list and n. sp.; R. DE LESSERT (112).
 Bohemia. *Hydrachnidæ*; R. PIERSIG (154).
 Hungary. *Trochosa singoriensis*; OSIKI (54).
 Servia. *Hydrachnid* fauna, ? n. spp.; GJORGEVIC (75).
 Italy. *Hydrachnidæ*; RINA MONTI (129). Valdotaine (Aosta), *Araneæ*; P. PAVESI (151). Trentino, *Hydrachnidæ*; LARGAIOLLI (102). Avellino, *Araneæ*; AGOSTINO (6). Italian Alps, *Tardigrada* and *Acari*; RINA MONTI (129).
 Montenegro. *Araneæ*; NOSEK (139): *Hydrachnidæ*; THON (203).
 Crete. *Scorpiones*; BIRULA (27).
 Cephalonia. *Scorpions* and *Araneæ*, brief list; SANGIORGI, Atti Soc. Modena xxxvi, p. 71.

2. *Africa.*

- N. Africa. *Scorpiones*, observ. and n. spp.; BIRULA (26).
 Erythrea. *Scorpiones*; BORELLI (33).
 Abyssinia and Congo. *Araneæ*, list and n. spp.; E. SIMON (186).
 Kameroun. *Acari* n. sp.; TRÄGARDH (211).
 S. Africa. *Araneæ* and *Scorpiones* n. spp.; PURCELL (160 & 161).
 Zoutpansberg. *Araneæ* n. spp.; E. SIMON (187).

3. *Asia.*

- Central Asia. *Buthus*, list and n. subsp.; A. BIRULA (28).
 Persia and Centr. Asia. *Galeodidae*; A. BIRULA (29).
 W. Persia and Beluchistan. *Scorpiones*, list and n. spp.; A. BIRULA (25).
 Indo-China. *Arachnida*, list and descript.; E. SIMON (184).
 India. *Ixodes* on *Tragulus*; LAVARRA (104).

4. *Malay Archipelago.*

- Java. *Araneæ* n. sp.; E. SIMON (187): *Thelyphonus* (anatomy); DAWYDOFF (56).
 Sarawak. *Scorpiones*, list and n. sp.; BORELLI (34).
 Aru Island. *Scorpiones* n. sp.; A. BIRULA (31).

5. *Australia and Pacific Islands.*

- Australia (Bounty Island). *Araneæ* n. g.; H. R. HOGG (87).
 N. Australia (Gulf of Carpentaria). *Araneæ* n. sp.; RAINBOW (164).
 W. Australia. *Araneæ* n. spp.; RAINBOW (164).
 S. Australia. *Scorpiones* n. sp.; A. BIRULA (30).
 Tasmania. *Araneæ* (one cave spider); RAINBOW (164).
 Sandwich Islands. *Araneæ*; E. SIMON (189).
 New Zealand. *Araneæ* n. sp.; H. R. HOGG (87): *Ixodes* n. sp.; CHILTON (44).
 Gilbert Island. *Araneæ*; RAINBOW (164).

6. *North America.*

- N. America. A classification of N. American Spiders; COMSTOCK (47).
 N.-East United States. *Lycosidae* and *Pisauridae*, list and n. spp.; T. H. MONTGOMERY (127 & 128).

N. America. *Lycosidæ* n. spp.; CHAMBERLIN (42 & 43): *Limnesia* 2 n. spp.; WOLCOTT (236).

Kansas. *Aranææ* n. spp.; T. W. SCHEFFER (179-182).

New York. *Opiliones* n. spp.; C. R. CROSBY (53): *Acari* n. sp. (?); BEUTENMÜLLER (23).

Texas. *Lycosidæ* and *Pisauridæ*, syn. and n. spp.; T. H. MONTGOMERY (127 & 128).

Florida. *Aranææ*, *Scorpiones* and *Acari* n. spp.; BANKS (12).

California. *Aranææ*, *Opiliones* and *Acari* n. spp.; BANKS (15).

Bermuda Island. *Aranææ* and *Acari*, list of spp. and 3 n. spp. of *Aranææ* (*Oonops*, *Anyphæna* and *Eutichurus*); BANKS (10).

7. Central and South America.

Mexico. (Fauna of Cacahuamilpa caves) list of *Arachnida*; A. L. HERRERA (85): *Isodes*; A. DUGÈS (58).

Mexico and Central America. *Aranææ* and *Opiliones*; F. O. P. CAMBRIDGE (39).

Argentina. *Hydrachnidæ* n. sp.; NORDENSKIÖLT (136).

Tucuman. *Scorpiones*; E. SIMON (185).

S. Chili and Magellan. *Aranææ* n. spp.; E. SIMON (188).

Patagonia. *Chernetes*; ELLINGSEN (61).

B. GEOLOGICAL.

Palæontological Spiders; A. FRISCH (71 & 72).

Kreischeria wiedi Geinitz and *K. geinitzi* Brongniart, discussed and figured; A. THEVENIN (201).

†Rochdale Carboniferous, *Eoscorpis* sp. n., W. BALDWIN (8); also W. BALDWIN & W. H. SUTCLIFFE (9).

IV. SYSTEMATIC INDEX †.

General Classification of *Arachnida* (inclus. *Trilobites*, *Limulus* et *Pantopoda*):

Grade A. *Anomomeristica*.

Subclass. *Trilobitæ*.

Grade B. *Nomomeristica*.

Subclass i. *Pantopoda*.

Subclass ii. *Enarachnida*.

Grade (a) *Delobbranchia* n. nom. (*Hydropneusta* Pocock).

Ordo i. *Xiphosura*.

Ordo ii. *Gigantostraca*.

Grade (b). *Eulobobbranchia* n. nom. (*Æropneusta* Pocock).

Sectio (a) *Pectinifera*.

Ordo i. *Scorpionidea*.

Subordo. *Apoxyppoda*.

Subordo. *Dionychopoda*.

Ordo ii. *Pedipalpi*.

Subordo. *Uropygi*.

Trib. i. *Urotricha*.

Trib. ii. *Tartaridæ*.

† This sign when prefixed to a quotation indicates a fossil form or forms. Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- Ordo iii. *Araneæ*.
 - Subordo. *Mesothelæ*.
 - Subordo. *Opisthothelæ*.
- Ordo iv. *Palpigradi*.
- Ordo v. *Solifugæ*.
- Ordo vi. *Pseudoscorpiones*.
 - Subordo. *Panctenodactyli*.
 - Subordo. *Hemictenodactyli*.
- Ordo vii. *Podogona* **n. nom.** (= *Meridogastra*).
- Ordo viii. *Opiliones*.
 - Subordo. *Cyphophthalmi*.
 - Subordo. *Mecostethi*.
 - Subordo. *Plagiostethi*.
- Ordo ix. *Rhynchostomi* (*Acarî*).
 - Subordo. *Notostigmata*.
 - Subordo. *Cryptostigmata*.
 - Subordo. *Metastigmata*.
 - Subordo. *Prostigmata*.
 - Subordo. *Vermiformia*.
 - Subordo. *Tetrapoda*;

E. RAY LANKESTER, Quart. J. Micr. Sci. (n. s.) No. 190, xlviii, pt. 2, pp. 165-269, 77 text-figg.

General Classification of Arachnida:

Subclass i. *Ctenophora* Pocock.

Ordo. *Scorpiones*.

Subclass ii. *Lipoctena* Pocock.

1. Sect. *Patellata* **n. nom.**

1. Subsect. *Megoperculata* Börner.

Ordo. *Pedipalpi*.

Ordo. *Araneæ*.

2. Subsect. *Cryptoperculata* Börner.

Ordo. *Meridogastra* Thorell.

Ordo. *Anthracomarti* Karsch (fossil).

Ordo. *Opiliones* Sund.

Ordo. *Acarina* Nitzsch.

2. Sect. *Haplocnemata* **n. nom.**

Ordo. *Chelonethi* Thorell.

Ordo. *Solifugæ* Sund.;

C. BÖRNER, Zoologia, Stuttgart, 1904.

General classification of the Arachnida Micrura, key to the orders (*Palpigradi*, *Pedipalpi*, *Araneæ*), p. 143; H. J. HANSEN & W. SORESENSEN, on two orders of Arachnida etc.

Brief account on classification of Arachnida; key to orders p. 14, key to spiders' families p. 26; J. H. COMSTOCK & ANNA B. COMSTOCK, a manual for the study of insects (Arachnida, pp. 12-14, 48 text-figg.).

I. SCORPIONES.

Close affinity of *Limulus* and Scorpion; LANKESTER, p. 205, Quart. J. Micr. Sci. (n. s.) No. 190, xlviii, No. 2.

Archisometrus shelfordi, Sarawak, p. 1; BORELLI, Boll. Mus. Torino xix, No 477, **n. sp.**

Butheolus melanurus Kessler and *B. melanurus persa* Birula, note on, pp. 74 & 75; BIRULA, Bull. Ac. St. Petersb. xix, No. 2 (1903).

Buthus occitanus maroccanus, Marocco, p. 106, **n. subsp.**, *B. occitanus berberensis* Pocock, *B. atlantis* Pocock, note on, pp. 106 & 107, *B.*

- acuteccarinatus abyssinicus*, Abyssinia (Kachenuha), p. 108, **n. subsp.**, *B. deserticola*, S. Algeria, p. 108, **n. sp.**, *B. amoureuxi* Savigny, note on, p. 110; BIRULA, Bull. Ac. St. Petersb. xix, No. 3 (Oct. 1903), **n. sp. & n. subsp.**
- B. doriae* Thorell, *B. eupeus thersites* C. Koch, *B. eupeus afghanus* Pocock, *B. eupeus kirmanensis* Birula, *B. caucasicus intermedius* Birula, *B. zarudnyi* Birula, note on, pp. 68-70, *B. zarudnyi sarghadensis*, Beluchistan, p. 70, **n. subsp.**, *B. palpator*, prov. Ssarghad, p. 72, **n. sp.**; BIRULA, t. c. No. 2 (1903), **n. sp. & n. subsp.**
- B. eupeus thersites* C. Koch, note on, p. 1, *B. eupeus barszczevskii*, Buchara, p. 2, **n. subsp.**, *B. kaznakovi*, prov. Schugnan, p. 2, **n. sp.**, *B. caucasicus intermedius* Birula, note on, p. 3, *B. caucasicus fuscus* Birula, note on, p. 4, *B. caucasicus przewalskii* Birula, note on, p. 5, *B. martensi* Karsch, note on, p. 6; BIRULA, Annuaire Mus. St. Petersb. ix (1904), **n. sp. & n. subsp.**
- B. gibbosus* Brullé, note on, p. 295; BIRULA, t. c. (1903).
- B. hottentota minax* L. Koch, from Abyssinia (riv. Niama) p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Centrurus hentzi*, Florida (Runnymede and Fort Reed), p. 142; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- †*Eoscorpium sparthensis*, Carboniferous of Rochdale, BALDWIN, p. 525, Tr. Manchester Geol. Soc. xxviii, **n. sp.**
- Euscorpium candiota*, Crete Isl. p. 295; BIRULA, Annuaire Mus. St. Petersb. viii, 1903, **n. sp.**
- Hemibuthus zarudnyi*, Makran, pr. Ge. p. 75; BIRULA, Bull. Ac. St. Petersb. xix, No. 2 (1903), **n. sp.**
- Hemihoplopous n. g.* (near *Urodacus*) *yaschenkoi*, South Australia; BIRULA, Annuaire Mus. St. Petersb. viii, No. 12, Nouvelles, **n. sp.**
- Hemiscorpion persicum*, Beluchistan (prov. Ssarbas), p. 77; BIRULA, Bull. Ac. St. Petersb. xix, No. 2, 1903, **n. sp.**
- Hemiscorpion tellini*, Halibaret (Col. Erythrea), p. 3; BORELLI, Boll. Mus. Torino xix, No. 463, **n. sp.**
- Jurus dufoureyus* Brullé, note on, p. 298; BIRULA, Annuaire Mus. St. Petersb. viii (1903).
- Opisthacanthus davydovi*, Aroe Island; BIRULA, t. c. No. 12, Nouvelles, **n. sp.**
- O. africanus* E. Sim., from Ababona forest, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Opisthophthalmus wahlbergi* Thorell, p. 139, *O. carinatus* Peters (= *O. anderssoni* and *histrion* Thorell + *Petrooicus furcatus* Sim.) p. 141, *O. schlechteri* Purc. p. 142, *O. granifrons* Pocock, p. 144, *O. leipoldti* Purc. p. 146, *O. capensis* Herbst (variations and synonym.), p. 147, *O. pallidipes* C. Koch, p. 151, *O. peringueyi* Purc. p. 153, *O. karrooensis* Purc. p. 153, *O. gigas* Purc. p. 154, *O. austerus* Karsch. p. 155, *O. chaperi* E. Sim. p. 156, *O. fossor* Purc. p. 157, *O. macer* Th. (= *O. fallax* Th. ♀), p. 158, *O. latimanus* C. K. (= *O. calvus* L. K.), p. 159, *O. pugnax* Thorell (= *O. curtus* Th. ♀), p. 161, *O. glabrifrons* Peters (= *O. laeviceps* and *prædo* Thorell), p. 161, *O. crassimanus*, Namaqualand, **n. sp.**, p. 164, *O. longicauda*, Great Bushmanland, **n. sp.**, p. 168, *O. pattisoni*, Sneeuwkop Mountain, **n. sp.**, p. 171, synopsis of the species of *Opisthophthalmus*, p. 175; W. F. PURCELL, Ann. S. African Mus. iv, pt. ii, **n. spp.**
- Parabuthus liosoma* Hempr. and Ehr., note on, p. 112, *P. liosoma dmitrievi*, Abyssinia (Kachenuha), p. 113; BIRULA, Bull. Ac. St. Petersb. xix, No. 3 (1903), **n. subsp.**
- P. villosus* Peters, *granimanus* Pocock, *heterurus* Pocock, from Centr. Abyssinia, p. 444; E. SIMON, Bull. Mus. Paris No. 7, 1904.
- Prionurus*, *Buthus*, *Archisometrus*, *Zabius*, *Tityus*, *Centrurus*, *Rhopalurus*,

- Scorpio*, *Heterometrus*, *Palamnaeus*, *Hemiscorpion*, *Opisthacanthus*, *Ischnurus*, *Bothriurus*, nomenclature notes, pp. 195–201; H. KRAEPELIN, Zool. Anz. xxviii, No. 6.
- Prionurus crassicauda orientalis* Birula, note on, p. 67, *P. mauritanicus* Pocock, note on, p. 105; BIRULA, Bull. Ac. St. Petersb. xix, Nos. 2 & 3 (1903).
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- Scorpio smithi* Pocock, from Somaliland, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- S. indicus*, embryology; POLJANSKY, Trudui St. Petersb. Obshch. xxxiii, pp. 42. etc.
- Tityus floridanus*, Florida (Key West), p. 142; BANKS, P. Ac. Philad. Jan. 1904, n. sp.
- Uroplectes occidentalis* E. Sim. & *U. fischeri* Karsch, from Centr. Abyssinia, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.

II. PEDIPALPI.

Pedipalpi, external morphology of Pedipalpi, pp. 6–22, internal morphology, pp. 24–139, systematic and phylogeny, pp. 141–157, bibliographical index, p. 158.

Systematic arrangement of Pedipalpi, p. 148 :

- I. Subordo *Palpigradi* Thorell (fam. *Kænenidæ* Grassi).
- II. Subordo *Uropygi* Thorell.
 - I. Tribu *Schizopeltidia* n. nov. (fam. *Schizonotidæ*).
 - II. Tribu *Holopeltidia* C. Br. (fam. *Thelyphonidæ* Lucas).
- III. Subordo *Amblypygi* Thorell (fam. *Tarantulidæ*); C. BÖRNER, Zoologica 1904, pp. 1–174, pls. and text-figg.

Damon medius Herbst, from Abyssinia (Anton Riv.) p. 443, E. SIMON, Bull. Mus. 1904, No. 7.

Thelyphonus caudatus, embryology, SCHIMKEWITSCH, pp. 56–77 and 93–110, Trudui St. Peterb. Obshch. xxxiii.

Trithyreus, *Phrynichus*, *Tarentula* and *Admetus*, nomenclature notes, pp. 201–204, K. KRAEPELIN, Zool. Anz. xxviii, No. 6.

III. PALPIGRADI.

Palpigradi, rapp. as suborder to *Pedipalpi*, external and internal morphology of *Kænenia mirabilis* Grassi; C. BÖRNER, Zoologica 1904, pp. 1–174, pls. & text-figg.

IV. ARANEÆ.

Classification of spiders, historical and systematical, new arrangement of suborders and families, key to suborders, p. 83.

1. Verticulatæ (Liphistiidæ).
2. Tetrapneumones (Aviculariidæ, Atypidæ, Hypochilidæ).
3. Filigrinæ (Uloboridæ, Dictynidæ (pars), Ecobiidæ, Eresidæ, Filistatidæ, Sicariidæ, Leptonetidæ, Oonopidæ, Dysderidæ, Palpimanidæ, Urocteidæ, Phlecidæ, Theridiidæ, Argiopidæ, Mimetidæ).
4. Chalinuræ (Hersiliidæ).
5. Polytrichæ (Psechridæ, Zoropsidæ, Dictynidæ (pars), Drassidæ, Zodariidæ (pars), Clubionidæ, Agelenidæ (pars), Pisauridæ, Lycosidæ, Oxyopidæ, Senoculidæ).

6. Stichotrichiæ (Dictynidæ (pars), Zodariidæ (pars)).
7. Saltigradæ (Salticidæ).
8. Laterigradæ (Thomisidæ).
9. Apneumones (Caponiidæ);

DAHL, F., SB. Ges. naturf. Berlin, pp. 85-120.

General synopsis of spiders' families of Central American fauna; FR. CAMBRIDGE, Arachn.-Aran. ii, Biol. Centr.-Amer., p. 541.

Variability in the number of teeth on the claws of adult spiders, showing their unreliability for systematic description; C. HARTMANN, Biol. Bull. vi, pp. 191-197, 4 text-figg.

Structure and classification of spiders, introductory sketch; A. E. THOMSON, Tr. Manchester Micr. Soc. 1903, pp. 54-70.

Aviculariidae.

Ancylotrypa cornuta, Cape Colony (Dumbrody), p. 119; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**

Bemmeris pardalina E. Sim. = *Harmachastes collinus* Pocock (Juv.), p. 121; PURCELL, t. c. (foot note).

Brachionopus pretoriae, Pretoria, p. 126; PURCELL, t. c. **n. sp.**

Cadmon **n. g.** (typ. *Moggridgea abrahami* Cb.), p. 143, *C. thoracica*, Cape peninsula, p. 144, pl. ix, fig. 1, *C. affinis*, Cape peninsula, p. 146, pl. ix, fig. 2, *C. congener*, Cape peninsula, p. 146, pl. ix, fig. 3, *C. dubia*, Cape peninsula, p. 147, pl. ix, fig. 4; O. P. CAMBRIDGE, Ann. S. African Mus. 1903, iii, pt. 5, **n. spp.** (Incompletely recorded, No. 24, Zool. Rec. 1903.)

Chilobrachys paviei E. Sim., p. 271, *C. dyscolus* E. Sim., p. 273, new description; E. SIMON, Mission Pavie iii.

Clitotrema **n. g.** p. 444, *zeltneri*, Abyssinia (Mt. Fické), p. 444; E. SIMON, Bull. Mus. Paris, No. 7, 1904, **n. sp.**

Ctenolophus **n. g.** (type *Acanthodon kolbei* Purcell), p. 117, key to species, p. 118; PURCELL, Tr. S. African Soc. xv, p. 111.

Ctenonemus pectiniger E. Simon = *Harmachastes* Juv., p. 121; PURCELL, t. c. (foot note).

Harpactirella schwarzi, Cape Colony (Willomore div.), p. 126; PURCELL, t. c. **n. sp.**

Idiops pungwensis, Pungwe river in Portuguese East Africa, p. 116; PURCELL, t. c. **n. sp.**

Melopæus albostriatus E. Sim., new description and fig., p. 270, pl. xvi, fig. 1; E. SIMON, Mission Pavie iii.

Migas paradoxus L. Koch, from Wanganui, New Zealand, note and text-fig., p. 68; H. R. HOGG, Ann. Nat. Hist. (7) xiii.

Moggridgea nigra, Cape Colony, p. 115; PURCELL, Tr. S. African Mus. xv, p. 111, **n. sp.**

Pelmatorycter pallidipes, Cape Colony (Matjesfontein), p. 120; PURCELL, t. c. **n. sp.**

Pisenor bicalcaratus, Centr. Abyss., p. 444; E. SIMON, Bull. Mus. Paris, No. 7, **n. sp.**

Pterinochilus junodi, Zoutpansberg, p. 66; E. SIMON, Rev. Suisse Zool. xiii, **n. sp.**

Spiroctenus pallidipes, Cape Colony (Worcester div.), p. 121, *S. latus*, Cape Colony (Wellington), p. 125; PURCELL, Tr. S. African Soc. xv, p. 111, **n. spp.**

Hypochilidae.

Ectatosticta australis E. Sim. 1902 = *Theridion troglodytes* Higgins and Petterd, p. 327; W. J. RAINBOW, Rec. Austral. Mus. v, pt. 5.

Uloboridae.

- Avellopsis* **n. g.** p. 128, *capensis*, Cape Colony, p. 128; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Hyptiotes curvatus Hentz, Eggs and Cocoon of, p. 278, text-fig.; T. H. SCHEFFER, Ent. News Philad. xv.
Menneus dromedarius, Cape Colony (King Williamstown), p. 127; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Miagrammopes constrictus, Natal, p. 130; PURCELL, t. c. **n. sp.**
M. rimosus E. Simon, new description, p. 273; E. SIMON, Mission Pavie iii.
Uloborus californicus, California (St Helena), p. 351, pl. 39, fig. 35; N. BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
U. geniculatus Oliv., from Bermuda Island, p. 273; N. BANKS, Tr. Connect. Ac. xi.

Dictynidae.

- Auximus schreineri*, Cape Colony (Hanover), p. 131, pl. x, fig. 1, *A. silvaticus*, Cape Colony, forest at the Knysna, p. 132, pl. x, fig. 2, *A. longipes*, Cape peninsula, p. 132, pl. x, fig. 3; PURCELL, Tr. S. African Soc. xv, p. 111, **n. spp.**
Dictyna calcarata, California (San Pedro), p. 342, pl. 40, fig. 42; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
D. floridana, Florida (Lake Worth), p. 125; BANKS, P. Ac. Philad., Jan. 1904, **n. sp.**
D. fuegiana E. Sim., supp. descrip., p. 84, *D. togata* Allen Gardiner, p. 85; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Dictynina **n. gen.** p. 342, *pallida*, California (Mt. Shasta), p. 342; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Dictyolathys californica, California (Palo Alto), p. 343, pl. 38, fig. 7, pl. 40, figg. 40 & 46; BANKS, t. c. **n. sp.**
Göldia obscura Keyserl. = (probably) *Titanoeca patellaris* E. S., p. 86; E. SIMON, Ann. Soc. ent. Belgique xlviii.
Heterodictyna **nov. nom.** for *Dictyna* pars, p. 118; F. DAHL, SB. Ges. naturf. Berlin 1904.
Macrobunus spinifer Tullgren = *Myropsis backhauseni* E. S., p. 86; E. SIMON, Ann. Soc. ent. Belgique xlvii.
Pseudauximus pallidus, Cape Colony (Hanover), p. 133, pl. x, fig. 4; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Thallumetus acanthochirus, Punta Arenas, p. 85, *T. celatus*, La Herradura, prov. Coquimbo, p. 85; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Eresidae.

- Adonea variegata*, Cape Colony, p. 137, pl. x, fig. 7; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Dresserus angusticeps, Cape Colony, p. 139, pl. x, fig. 9, *D. laticeps*, Cape Colony, Namaqualand div., p. 140, pl. x, fig. 10; PURCELL, t. c. **n. spp.**
Seothyra fasciata, Cape Colony, S. W. Kalahari, p. 138, pl. x, fig. 8; PURCELL, t. c. **n. sp.**
Stegodyphus canus, Cape Colony, Namaqualand div., p. 134, pl. x, fig. 5, *S. tentorialis*, Cape Colony (Hanover and Eierfontein), p. 135, pl. x, fig. 6; PURCELL, t. c. **n. spp.**

Filistatidae.

- Filistata hibernalis* Hentz, from Bermuda Island, p. 268; N. BANKS, Tr. Connect. Ac. xi.

Leptonetidae.

- Leptoneta californica*, California (Mt. Diablo, Contra-Costa County), p. 333, pl. 38, fig. 11; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Physoglenes n. g. p. 87, *P. vivesi*, Chili, Los Perales, p. 88, text-fig.; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Oonopidae.

- Oonops bermudensis*, Bermuda Islands, p. 269; N. BANKS, Tr. Connect. Ac. xi, text-fig. **n. sp.**

Sicariidae.

- Drymusa silvicola*, forest at Knysna, p. 152, pl. xi, figg. 24 & 25, *D. producta*, forest on the mountain side at Swellendam, p. 153, pl. xi, fig. 26, key of the species, p. 154; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**
Loxosceles spinulosa, Cape Colony (Swellendam div.), p. 140; PURCELL, t. c. **n. sp.**
Scytodes montana, Cape peninsula, p. 141, pl. x, fig. 11, *S. lycosella*, Natal (Rietvlei), p. 142, pl. x, fig. 12, *S. triangulifera*, Prince Albert village, p. 143, pl. x, fig. 13, *S. leipoldti*, Clanwilliam, p. 143, *S. flagellata*, Caledon div., p. 144, pl. x, fig. 15, *S. arenacea*, Orange River, p. 145, *S. testudo*, Cape peninsula, p. 145, pl. x, fig. 17, *S. gooldi*, Cape Colony, p. 146, pl. x, fig. 18, *S. subulata*, St. Helena Bay, p. 147, *S. lyriformis*, Hanover, p. 148, *S. karrooica*, Matjesfontein, p. 148, *S. silvatica*, Knysna forest and Port Elizabeth, p. 148, *S. caffra*, Zululand, p. 149, pl. x, fig. 20, *S. cedri*, Clanwilliam div., p. 149, pl. x, fig. 21, *S. lanceolata*, Hanover, p. 150, pl. x, fig. 22, *S. elizabethæ*, Port Elizabeth, p. 150, pl. x, fig. 23, key to the South African species, p. 151; PURCELL, t. c. **n. spp.**
Scytodes longipes Lucas and *S. fusca* Walck., from Bermuda Island, pp. 268 & 269; N. BANKS, Tr. Connect. Ac. xi.

Dysderidae.

- Ariadna dentigera*, Cape Town, p. 154, *A. lightfooti*, Caledon div., p. 155, *A. jubata*, Namaqualand div. (Tsabis), p. 156, *A. kolbei*, Kentani dist. (Transkei), p. 157, *A. bilineata*, Cape Colony, p. 158, *A. karrooica*, Cape Colony, p. 159, *A. capensis*, Cape Pen. (Wynberg Hill), p. 160, *A. segestrioides*, Dumbrody, p. 161, *A. umtalica*, Mashonaland and Bechuanaland, p. 162, *A. scabripes*, Hanover, p. 162, synopsis of the South African species, p. 164; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**
Dysdera crocata C. Koch, from Bermuda Island, p. 269; N. BANKS, Tr. Connect. Ac. xi.
Harpactes drassoides E. Simon, new descript. and fig., p. 280, pl. v, figg. 1 & 2; R. DE LESSERT, Observ. Ar. du bassin du Léman.
Segestriella n. gen. p. 164, *S. gryllotalpa*, Cape Colony, St Helena Bay, p. 105; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. sp.**
Stalita mrázeki, Montenegro (Lipska pecina cave), p. 2; NOSEK, Arachn. Montenegrina, SB. Bohmisch. Ges. 1903, No. 46, **n. sp.**

Caponiidae.

- Caponia spiralifera*, Cape Colony (Hanover), p. 166, pl. xi, fig. 28, *C. karrooica*, Matjesfontein, p. 166, pl. xi, fig. 30, *C. forficifera*, Worcester

- div. (Brandvlei) and Knysna Forest, p. 167, pl. xi, fig. 31, *C. braunsi*, Willowmore, p. 167, pl. xi, fig. 32, *C. capensis*, Cape Peninsula, p. 168, pl. xi, fig. 33, *C. hastifera*, Willowmore, p. 168, pl. xi, fig. 34, *C. simoni*, Worcester, p. 168, pl. xi, fig. 35, key of the species of *Caponia*, p. 169 ; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**
Diploglena **n. g.** p. 169, *D. capensis*, Cape Colony, p. 170, pl. xi, fig. 36 ; PURCELL, t. c. **n. sp.**

Prodidomidæ.

- Prodidomus capensis*, Cape Town, Dumbrody, p. 170, pl. xi, fig. 39, *P. purpurascens*, Cape Penins., p. 171, pl. xi, fig. 40, *P. scaber*, Cape Colony (Prince Albert), p. 172, pl. xi, fig. 42 ; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**

Drassidæ.

- Note on genera *Laronia*, *Callilepis* and *Pterotricha* ; KULCZYŃSKI, Fragmenta i, p. 548.
 Key to Chilian *Drassidæ* ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, p. 88.
Drassinella **n. g.** p. 335, *D. modesta*, California (Santa Catalina Island), p. 335, pl. 39, fig. 33 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Drassodes californica (sic.), California (Downieville), p. 338, pl. 38, fig. 8, pl. 39, fig. 28 ; BANKS, t. c. **n. sp.**
D. heeri Pavesi, note and synonymy., p. 283, pl. v, fig. 5 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
Gnaphosa californica, California (Claremont), p. 335, pl. 38, fig. 10 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
G. islandica W. Sor., new descript. and observ. ; W. SÖRENSEN, Ent. Meddel. 1904 (2), 1 heft.
G. pseudolaponica, Norway, p. 6 ; E. STRAND, Forh. Selsk. Christian. 1904, No. 5, **n. sp.**
G. utahana, Utah, p. 110 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
Herpyllus angustus, California (San Pedro), p. 337, pl. 40, fig. 43 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
H. californicus, California (Lakeside), p. 110 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
Megamyrmeleon gayi, Chili (Penaflor), p. 89 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Melanophora porteri, Chili (Los Perales), p. 89 ; E. SIMON, t. c. **n. sp.**
Prosthesina præfica L. Koch, note and syn., p. 289, *P. fortuita* E. Sim., p. 290, pl. v, fig. 4, *P. exigua* Müller, pl. v, fig. 3 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
P. tenera, Denmark, p. 280 ; W. SÖRENSEN, Ent. Meddel. 1904 (2), 1 heft. **n. sp.**
Sergiolus cyaneiventris E. Simon, note on, p. 122 ; BANKS, P. Ac. Philad., Jan. 1904.
Zelotes aprilius, Maryland, p. 110 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
Z. femoralis, California, p. 336, pl. 38, fig. 1, *Z. maculata*, California (Claremont), p. 336, pl. 40, fig. 38, *Z. pacifica*, California (Santa Rosa Island), p. 336, pl. 39, fig. 15 ; BANKS, P. Calif. Ac. iii, No. 13, **n. spp.**

Zodariidæ.

- Capheris decorata*, Zoutpansberg, p. 66; E. SIMON, Rev. Suisse Zool. xii, 1904, **n. sp.**
Diores simoni, Cape Penins., p. 147, pl. 9, fig. 5, *D. cognata*, Cape Penins., p. 149, pl. 9, fig. 6; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**

Hersiliidæ.

- Hersilia siamensis* E. Sim., new descript., p. 274; E. SIMON, in Mission Pavie iii.

Pholcidæ.

- Pholcus tipuloides* L. Koch, from Bermuda Island, p. 271; N. BANKS, Tr. Connect. Ac. xi.

Theridiidæ.

- Stridulating organs in several genera of Theridiidæ (Rhomphæa, Argyrodes, Theridion), p. 559, pl. 14, figg. 24-29; KULCZYŃSKI, Fragmenta i.
Ariamnes corniger E. Sim., descript. of male, p. 339, text-fig.; E. SIMON, Fauna Hawaiensis iii.
Coleosoma floridana (sic) **nov. nom.** for *Coleosoma blandum* Keyserling nec Cambridge; BANKS, P. Ac. Philad., Jan. 1904, p. 128.
Coscinida triangulifera, Java, p. 68; E. SIMON, Rev. Suisse Zool. 1904, **n. sp.**
Dipoena erythropus E. Simon, supp. descript. p. 306; R. DE LESSERT, Observ. Ar. du bassin du Léman.
D. pictipes, California (Claremont), p. 345; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Enoplognatha maritima E. Simon, supp. descript., p. 39, pl. v, fig. 7; R. DE LESSERT, Observ. Ar. du bassin du Léman.
E. molesta, Cape Colony, p. 149, pl. x, fig. 1, *E. inornata*, Cape Col. (Clanwilliam), p. 151, pl. x, fig. 11; O. P. CAMBRIDGE, Ann. S. African Mus. iii, p. 5, **n. spp.**
Episinus truncatus Latr. and *lugubris* E. Sim., note on, p. 549; KULCZYŃSKI, Fragmenta i.
Euryopsis californica, California (Los Angeles), p. 345, pl. 39, fig. 23 & 26; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Latrodectus concinnus, Cape Penins., p. 151, pl. 10, figg. 3 & 4, *L. indistinctus*, Cape Penins., p. 154, pl. 11, fig. 1; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**
L. tredecim-guttatus Rossi, from Mt. Fické Abyss.; E. SIMON, Bull. Mus. Paris, No. 7, p. 442.
L. geometricus C. Koch, from Bermuda Island, p. 272; N. BANKS, Tr. Connect. Ac. xi.
Macro **n. g.** p. 156, *M. quadrimaculata*, Cape Town, p. 157, pl. 11, fig. 4; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. sp.** (incompletely Recorded 1903, No. 24)*.
Rhomphæa longa, Herzegovina, p. 533, pl. 14, fig. 1 & 2, KULCZYŃSKI, Fragmenta i, **n. sp.**
Sphyrrotinus delphini, Punta Arenas, p. 92; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**

* *Macro quadrimaculata* Cambr. is certainly synonymous with *Cyatholipus quadrimaculatus* E. Simon, Hist. Nat. Ar. t. 1, p. 713.—(Note of Recorder.)

- Teutana lepid*a, Cape Penins., p. 154, pl. 11, fig. 2, *T. connexa*, Cape Penins., p. 156, pl. 11, fig. 3; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**
- Theridion auberti*, Zoutpansberg, p. 67; E. SIMON, Rev. Suisse Zool. 1904, **n. sp.**
- T. bertkawi* Bösenberg, def. and fig., p. 303, pl. v, fig. 11, 12, 13 & 16; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- T. bösenbergi* **n. nom.** for *T. bertkawi* Bösenberg præocc.; E. STRAND, Ent. Zeit. xviii, No. 3.
- T. delicatum*, Cape Penins., p. 157, pl. 11, fig. 5, *T. dedux*, Durban, p. 158, pl. 12, fig. 1, *T. purcelli*, Cape Town, p. 159, pl. 12, fig. 2; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**
- T. floridensis* (sic) **n. nom.** for *Th. tyra*, Keyserling non Hentz; BANKS, P. Ac. Philad., Jan. 1904, p. 125.
- T. californicum*, California (Mill Valley), p. 344, pl. 39, fig. 34; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- T. fuegianum* Allen Gardiner, p. 90, **n. sp.**, *T. attritum* and *spinipes* Nicolet, observ. and descript., pp. 91 & 92; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904.
- T. tepidariorum* C. K., *studiosum* Hentz and *rufipes* Lucas, from Bermuda Island, p. 272; N. BANKS, Tr. Connect. Ac. xi.
- Tricantha tricornis* E. Sim., new descript., p. 150; FR. CAMBRIDGE, Biol. Centr.-Amer. Arachn.-Aran. ii.

Argiopidae.

- Acacesia*, new defin., p. 502, *A. foliata*, p. 502, pl. 48, figg. 1 & 2; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Acrosoma calcaratum* O. P. Cambr. = *Keyserlingia cornigera* O. P. Cambr., p. 532; FR. CAMBRIDGE, t. c.
- Amamra* O. P. Cambr. = *Vixia*, p. 485, *A. nigromaculata* O. P. Cambr. = *Epeira clavispina* O. P. Cambr., p. 509; FR. CAMBRIDGE, t. c.
- Araneus* (*Epeira*) *ulrichi* Hahn, p. 363, pl. v, fig. 25, *A. (Singa) pygmæus* Sund., p. 370, suppl. descript.; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Aranea nephiloides*, p. 511, pl. 48, fig. 22, *A. smithi*, p. 511, pl. 49, fig. 1, *A. sargi*, p. 511, pl. 49, fig. 2, *A. gravabilis*, p. 511, pl. 49, fig. 4, *A. aculifera*, p. 512, pl. 49, fig. 5, *A. incerta*, p. 512, pl. 49, figg. 7 & 8, *A. dilatata*, p. 513, pl. 49, fig. 9, *A. helveola*, p. 513, pl. 49, fig. 10, *A. pallidula*, p. 514, pl. 49, fig. 13, *A. septemmammata*, p. 514, pl. 49, fig. 15, *A. spinigera*, p. 515, pl. 49, fig. 16, *A. rufipes*, p. 515, pl. 49, fig. 17, *A. detrimentosa*, p. 515, pl. 49, fig. 18, *A. cylindrica*, p. 515, pl. 49, figg. 19 & 20, *A. laticeps*, p. 516, pl. 49, fig. 21, *A. nigropustulata*, p. 516, pl. 49, fig. 22, *A. veniliæ*, p. 516, pl. 49, figg. 23 & 24, *A. championi*, p. 517, pl. 50, figg. 1 & 2, *A. mormon*, p. 517, pl. 51, fig. 1, *A. grafica*, p. 518, pl. 51, fig. 2, *A. flava*, p. 518, pl. 51, fig. 3, *A. fasciolata*, p. 519, pl. 51, fig. 5, new descript. and fig., *A. sinistra*, Mexico, p. 510, pl. 48, fig. 21, *A. concolorata*, Panama, p. 511, pl. 49, fig. 3, *A. glabrata*, Panama, p. 512, pl. 49, fig. 6, *A. dilatata*, Guatemala, p. 513, pl. 49, fig. 9, *A. nigrocincta*, Panama, p. 513, pl. 49, figg. 11 & 12, *A. anguinifera*, Mexico, p. 514, pl. 49, fig. 14, *A. cyrtophoroides*, Mexico, p. 518, pl. 51, fig. 4; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, **n. spp.**
- Araneus rufipalpis* Lucas, *theisi* Walck., *cereolus* and *strupifer* E. Simon, from Centr. Abyssinia; E. SIMON, Bull. Mus. Paris 1904, No. 7, p. 443.
- A. exsertus*, Gulf of Carpentaria (Mornington Island), p. 102, figg. 26 & 27; RAINBOW, Rec. Austral. Mus. v, pt. 2, **n. sp.**

- A. singæformis*, Kansas, p. 259, pl. 17, figg. 4, 5, & 6; T. H. SCHEFFER, Ent. News Philad. xv, **n. sp.**
- Argiope lordi* Cambr., from Harrar, *A. flavipalpis* Lucas, from Belg. Congo; E. SIMON, Bull. Mus. Paris 1904, No. 7, p. 442.
- Argyropeira hortorum* Hentz, from Bermuda Island, p. 273; N. BANKS, Tr. Connect. Ac. xi.
- Bathypantes pallidula* (sic), California (Claremont), p. 346, pl. 40, fig. 45; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Carepalxis*, note on, p. 520; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Centromerus balteatus* E. Simon, suppl. descrip., p. 335, pl. v, fig. 21; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Cnephalocotes subæqualis* Westring = *Walckenaera fortuita* O. P. Cambr., *Lophomma laudatum* Kulczynski et *Cnephalocotes fuscus* O. P. Cambridge, p. 315; R. DE LESSERT, t. c.
- Cornicularia cuspidata* Bl., p. 9, pl. i, fig. 3; F. P. SMITH, J. Quekett Club 1904, ser. 2, t. ix.
- Coryphæus glabriceps* Fr. Cambridge = *Gongylidium distinctum* E. Simon; F. P. SMITH, p. 111, J. Quekett Club, ser. 2, t. ix.
- Cyclosa*, def. and key of the Centr.-Amer. spp. p. 491, *C. conica*, p. 493, pl. 46, figg. 19 & 20, *C. tuberculifera*, p. 493, pl. 47, fig. 1, *C. culta*, p. 493, pl. 47, fig. 2, *C. lacerta*, p. 494, pl. 47, fig. 3, *C. caroli*, p. 494, pl. 47, fig. 4, *C. furcata*, p. 494, pl. 47, fig. 6, *C. trifida*, p. 495, pl. 47, fig. 7, *C. bifurca*, p. 495, pl. 47, fig. 8, *C. walckenaeri*, p. 495, pl. 47, fig. 9, *C. diversa*, p. 496, pl. 47, fig. 12, *C. clara*, p. 497, pl. 47, fig. 13, *C. fusiformis*, p. 497, new notes and figg., *C. conigera*, Mexico, p. 494, pl. 47, fig. 5, **n. sp.**; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- C. fissicauda* O. P. Cambr. = *Cyclosa bifurca* McCook, p. 495; FR. CAMBRIDGE, t. c.
- C. cervicula* McCook = *Cyclosa walckenaeri* O. P. Cambr., p. 496; FR. CAMBRIDGE, t. c.
- C. caudata* Hentz, from Bermuda isl., p. 273; N. BANKS, Tr. Connect. Ac. xi.
- Cyrtarachne mexicana* and *C. dugesi* O. P. Cambridge = *Marxia stellata*, p. 481; FR. CAMBRIDGE, t. c.
- C. walleri* Blackw., from Tourkouana, p. 442; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- C. decentuberculata* O. P. Cambr., referred to the gen. *Glyptogona*; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, p. 523.
- Cyrtophora citricola* Forsk., from river Dongou, p. 442; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Diplocephalus fuscipes* Blackw., figured, p. 9, pl. i, fig. 4; F. P. SMITH, J. Quekett Club 1904, ix.
- Dicyphus cornutus* Blackw., figured, p. 9, pl. i, fig. 2; F. P. SMITH, t. c.
- Edricus*, def. p. 499, *E. spinigerus*, p. 500, pl. 49, fig. 25, *E. productus*, p. 500, pl. 49, fig. 26, *E. crassicauda*, p. 500, pl. 47, fig. 21; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Enidia* **n. nom.** for *Dicyphus* Menge præocc. p. 115; F. P. SMITH, J. Quekett Club, Ser. 2, ix.
- Entelecara acuminata* Wid., figured, p. 9, pl. i, fig. 1; F. P. SMITH, t. c.
- Epeira bifurcata* Keyserl. = *Cyclosa walckenaeri* O. P. Cambr., p. 496, *E. cambridgei* Keyserl. = *E. illicita* O. P. Cambr., p. 506, *E. nava* O. P. Cambr. = *E. scutigera* O. P. Cambr., p. 508, *E. fecunda* O. P. Cambr. = *E. incerta* O. P. Cambr., 512, *E. nigrohumeralis* O. P. Cambr. = *E. detrimentosa* O. P. Cambr., p. 515, *E. destrecta* O. P. Cambr. = *E. conseqna* O. P. Cambr., p. 518; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- E. floridensis*, Florida (Miami), p. 129; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**

- E. emertoni*, North America, p. 111; BANKS, J. N. York Ent. Soc. June, 1904, **n. sp.**
- E. excelsa* Banks = *Ep. pacifica* McCook, p. 348; BANKS, P. Calif. Ac. iii, No. 13.
- E. mitifica* E. Simon, new description, p. 280; E. SIMON, in Mission Pavie iii.
- Erigonee*, spiders of the *Erigone* Group, list of British spp., p. 109; F. P. SMITH, J. Quekett Club, Ser. 2, vol. ix.
- Erigone aries* Kulcz. = *Scotinotylus antennatus* (Cambr.), var., p. 552; KULCZYNSKI, Fragmenta ii.
- E. californica*, California, p. 347, pl. 38, fig. 3; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Erigonidium n. gen.*, type *Erigone graminicola* Sund., p. 112; F. P. SMITH, J. Quekett Club, Ser. 2, vol. ix.
- Falconeria n. gen.*, type *Neriere cornuta* Blackw., p. 115; F. P. SMITH, t. c.
- Eustala*, def. and key of the Centr.-Amer. spp., pp. 503 & 504, *E. fuscovittata*, p. 505, pl. 48, figg. 3 & 4, *E. illicita*, p. 506, pl. 48, figg. 5 & 6, *E. anastera*, p. 506, pl. 48, figg. 7 & 8, *E. scutigera*, p. 508, pl. 48, figg. 11 & 12, *E. latebricola*, p. 508, pl. 48, fig. 15, *E. vegeta*, p. 509, pl. 48, figg. 16 & 17, *E. fragilis*, p. 509, pl. 48, fig. 18, *E. clavispinia*, p. 509, pl. 48, fig. 19, *E. semifoliata*, p. 510, pl. 48, fig. 20; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- E. bijida*, Costa-Rica, p. 507, pl. 48, figg. 9 & 10, *E. guttata*, Mexico, Guatemala, Panama, p. 508, pl. 48, figg. 13 & 14; FR. CAMBRIDGE, t. c.
- Gasteracantha*, def. and key of the Cent.-Amer. spp., p. 524, *G. caneriformis*, p. 525, pl. 51, fig. 14, *G. kochi*, p. 525, pl. 51, fig. 15; FR. CAMBRIDGE, t. c.
- G. scapha* Gerst., from Choa and Tourkouana, *G. hildebrandti* Karsch, from Madi and Niam-Niams reg.; E. SIMON, Bull. Mus. Paris 1904, No. 7, p. 442.
- G. arcuata* Fabr., pl. 16, fig. 4, *G. propinqua* Cambr., pl. 16, fig. 5, *G. leucomelas* Dol., pl. 16, fig. 3, figured; E. SIMON, in Mission Pavie iii.
- Glyptogona*, note on, p. 523; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Gongylidiellum simoni*, Genève, p. 329, pl. 5, figg. 14 & 15; R. DE LESSERT, Observ. Ar. du bassin du Léman, **n. sp.**
- Hentzia*, new defin. p. 523, *H. trivittata*, p. 523, pl. 51, figg. 12 & 13; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Kaira*, def. and key of the Centr.-Amer. spp., p. 522, *K. gibberosa*, p. 522, pl. 51, fig. 9, *K. altiventer*, p. 522, pl. 51, fig. 10, *K. dromedaria*, p. 522, pl. 51, fig. 11; FR. CAMBRIDGE, t. c.
- Landana*, note on the genus, p. 95, *L. edwardsi*, Chili (los Perales), p. 94; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Larinia chloreis* Aud., from Herrer valley, p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Lepthyphantes zebrinus* Menge and *L. zimmermanni* Bertk., note on, p. 553, pl. 14, figg. 19 & 20, *L. frigidus* E. Simon, pl. 14, figg. 5, 13, 14, *L. annulatus* Kulcz. pl. 14, fig. 4, *L. kotulai* Tirol, p. 536, pl. 14, figg. 9 & 10, *L. (?) armatus* Tirol, p. 540, pl. 14, figg. 7, 8, 11; W. KULCZYNSKI, Fragmenta i, **n. spp.**
- L. nodifer* E. Sim., p. 343, pl. 5, figg. 22 & 23, *L. notabilis* Kulcz., p. 345, pl. 5, figg. 26 & 27, supp. descript.; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Leucauge unguolata* Karsch, from Belg. Congo, p. 442; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Linyphia interpolis*, Cape Colony (Clanwilliam), p. 161, pl. 12, fig. 3; O. P. CAMBRIDGE, Ann. S. African Mus. iii, p. 5, **n. sp.**

- L. limatula*, Chili (La Herradura), p. 93; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Lophocarenum frontalis*, North Amer., p. 111; BANKS, J. N. York Ent. Soc. June 1904, **n. sp.**
- L. fasciatum*, California (Claremont), p. 347, pl. 39, figg. 20, 21, 24; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Lucrinus n. g.*, p. 162, *L. putus*, Cape Colony (Clanwilliam), p. 162, pl. 12, fig. 4; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. sp.**
- Mahadiva reticulata* O. P. Cambr. = *Verrucosa arenata*, p. 482; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Mangora*, def. and key of the Centr.-Amer. spp., p. 477, *M. bimaculata*, p. 479, pl. 45, figg. 10 & 11, *M. picta*, p. 479, pl. 45, figg. 14 & 15, *M. mobilis*, p. 479, pl. 45, figg. 16 & 17, *M. passiva*, p. 480, pl. 45, fig. 19, *M. trilineata*, p. 480, pl. 46, fig. 20; FR. CAMBRIDGE, t. c.
- M. calcarifera*, Mexico, Guatemala, p. 479, pl. 45, figg. 12 & 13, *M. spinula*, Mexico, p. 480, pl. 45, fig. 18; FR. CAMBRIDGE, t. c. **n. spp.**
- Marxia*, def. p. 481, *M. stellata*, p. 481, pl. 45, figg. 21 & 22; FR. CAMBRIDGE, t. c.
- Metazygia n. g.* (type *Epeira wittfeldæ* McCook), def. and key of spp., p. 501, *M. wittfeldæ*, p. 501, pl. 47, figg. 22 & 23, *M. gregalis*, p. 501, pl. 47, figg. 24; FR. CAMBRIDGE, t. c.
- Microthenea*, def. and key of the Centr.-Amer. spp., pp. 525 & 526, *M. gracilis*, p. 528, pl. 50, fig. 3, pl. 51, fig. 16, *M. mamillata*, p. 529, pl. 50, fig. 4, *M. longicauda*, p. 530, pl. 50, fig. 5, *M. brevipes*, p. 531, pl. 50, fig. 8, *M. obtusospina*, p. 531, pl. 50, fig. 9, *M. cornigera*, p. 532, pl. 50, fig. 10, *M. vitiosa*, p. 532, pl. 50, fig. 11, *M. parallela*, p. 533, pl. 50, fig. 13, *M. patruelis*, p. 533, pl. 50, figg. 15 & 16, *M. duodecim-spinosa*, p. 535, pl. 51, fig. 18, *M. schreibersi*, p. 536, pl. 51, fig. 19, *M. sagittata*, p. 536, pl. 50, figg. 20 & 21, *M. gladiola*, p. 537, pl. 51, figg. 22, *M. bimucronata*, p. 538, pl. 51, fig. 23, *M. mitrata*, p. 538, *M. reduviana*, p. 539, *M. furcula*, p. 539, pl. 51, fig. 25, *M. fericula*, p. 539; FR. CAMBRIDGE, t. c.
- M. striata*, Guatemala, p. 530, pl. 50, fig. 6, *M. spinulata*, Mexico, p. 530, pl. 50, fig. 7, *M. granulata*, Mexico, p. 532, pl. 50, fig. 12, *M. uncata*, Guatemala, p. 533, pl. 50, fig. 14, *M. triserrata*, Guatemala, p. 534, pl. 50, fig. 17, *M. quadriserrata*, Guatemala, p. 534, pl. 50, fig. 18, *M. serrata*, Panama, Chiriqui, p. 534, pl. 50, fig. 19, *M. inæqualis*, Guatemala, p. 535, pl. 50, fig. 20, *M. subspinosa*, Guatemala, p. 535, pl. 51, fig. 17, *M. catenulata*, Guatemala, p. 538, pl. 51, fig. 24; FR. CAMBRIDGE, t. c. **n. spp.**
- Micryphantes corniger* Blackw., suppl. descrip., p. 337, pl. 5, fig. 18; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Neoscona*, def. and key of the Centr.-Amer. spp., p. 466, *N. oaxacensis*, p. 468, pl. 44, figg. 4 & 5, *N. benjamina*, p. 470, pl. 44, fig. 8, *N. theisi*, p. 470, pl. 44, figg. 9 & 10, *N. arabesca*, p. 472, pl. 44, figg. 13 & 14, *N. cooksoni*, p. 473, pl. 44, fig. 16, *N. volucripes*, p. 473, pl. 14, fig. 18, *N. conifera*, Mexico, Costa Rica, p. 469, pl. 44, figg. 6 & 7, *N. minima*, Mexico, Guatemala, p. 471, pl. 44, figg. 11 & 12, *N. amulensis*, Mexico, p. 472, pl. 44, fig. 15, *N. orizabensis*, Mexico, p. 473, pl. 44, fig. 17; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, **n. spp.**
- Neosconella n. g.*, def. and key of spp., p. 474, *N. solersoides*, p. 475, pl. 45, figg. 3 & 4, *N. lineatipes*, p. 476, pl. 45, figg. 5 & 6, *N. expleta*, p. 476, pl. 45, fig. 7, *N. habilis*, p. 477, pl. 45, fig. 8; FR. CAMBRIDGE, t. c.
- N. styligera*, Guatemala, p. 475, pl. 45, fig. 1, *N. guttata*, p. 477, pl. 45, fig. 9; FR. CAMBRIDGE, t. c. **n. spp.**
- Nephila femoralis* Lucas, *senegalensis* Walck., *pilipes* Lucas, *cruentata* Fabr. from Abyssinia and Congo, p. 442; E. SIMON, Bull. Mus. Paris 1904, pp. 442.
- N. clavipes* Fabr., from Bermuda isl., p. 273; N. BANKS, Tr. Connect. Ac. xi.

- Edothorax agrestis* Blackw., an abnormal female, p. 328, pl. 5, fig. 8 ; R. DE LESSERT, *Observ. Ar. du bassin du Léman*.
- Papflagon beatus* Cambr. = *Pronous tuberculifer* Keyserl. p. 541 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arach.-Aran. ii*.
- Parawixia* **n. g.** (type *Epeira dextra* Cambr.), def. and key of spp., p. 487, *P. dextra*, p. 488, pl. 46, fig. 9 & 10, *P. armata*, p. 489, pl. 46, fig. 11, *P. hypocrita*, p. 489, pl. 46, fig. 12, *P. guatemalensis*, p. 489, pl. 46, fig. 14, *P. hoaxa*, p. 490, pl. 46, fig. 15, *P. honesta*, p. 490, pl. 46, fig. 17, *P. rigida*, p. 491, pl. 46, fig. 18 ; FR. CAMBRIDGE, t. c.
- P. hamata*, Costa Rica, p. 489, pl. 46, fig. 3, *P. tredecimnotata*, Guatemala, p. 490, pl. 46, fig. 16 ; FR. CAMBRIDGE, t. c. **n. spp.**
- Pocadicnemis pumilus* Blackw., figured, pl. 1, fig. 5 ; F. P. SMITH, J. Quekett Club 1904, t. ix.
- Poltyx salebrosus*, W. Australia (Fremantle), p. 104, figg. 28 & 29 ; RAINBOW, *Rec. Austral. Mus. v*, p. 2, **n. sp.**
- P. turriger* E. Simon, figured, pl. 16, fig. 6 ; E. SIMON, *Mission Pavie iii*.
- Priperia* **n. g.**, p. 340, *P. bicolor*, Sandwich Isl., p. 340 ; E. SIMON, *Fauna Hawaiiensis iii*, **n. sp.**
- Scoloderus*, key of the Centr.-Amer. spp., p. 521, *S. americanus*, p. 521, pl. 51, fig. 6, *S. nigriceps*, p. 521, pl. 51, fig. 7, *S. tuberculiferus*, p. 521, *S. gibber*, p. 521, pl. 51, fig. 8 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arach.-Aran. ii*.
- Singa lutea* O. P. Cambr. = *S. flava* O. P. Cambr., p. 518 ; FR. CAMBRIDGE, t. c.
- Sphecozone dentimana* E. Sim., new descript., p. 277 ; E. SIMON, *Mission Pavie iii*.
- Tetragnatha nitens* Aud., from Madi and Niam-Niams reg., p. 442 ; E. SIMON, *Bull. Mus. Paris 1904*, No. 7.
- Theridiosoma gemmosum*, eggs cocoon figured, p. 163 ; T. H. SCHEFFER, *Canad. Ent. xxxvi*, No. 6.
- Turckheimia scelestia* Cambr. = *T. diversa* Cambr., p. 496, *T. armata* Cambr. = *Epeira spicata* Cambr., p. 499 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arach.-Aran. ii*.
- Verrucosa*, def. and key of the Centr.-Amer. sp., p. 481, *V. arenata*, p. 482, pl. 45, figg. 23 & 24, *V. undecim-variolata*, p. 483, pl. 45, figg. 25 & 26 ; FR. CAMBRIDGE, t. c.
- Wagneriana* **n. nom.** for *Wagneria* McCook præocc., def. and key of the Centr. Amer. spp., p. 497, *W. tauricornis*, p. 498, pl. 47, figg. 14 & 15, *W. undecim-tuberculata*, p. 498, pl. 47, figg. 17 & 18, *W. spicata*, p. 499, pl. 47, figg. 19 & 20, *W. carinata*, Guatemala, p. 498, pl. 47, fig. 16 ; FR. CAMBRIDGE, t. c.
- Walckenaera acuminata* Blackw., figured, pl. 1, figg. 7 & 8 ; F. P. SMITH, J. Quekett Club 1904, t. ix.
- W. inflexa* Westr. (*W. westringi* Strand), note and new descript. ; E. STRAND, *Norske Selskr. Sk. 1903 (1904)*, No. 7.
- Wideria antica* Wid., figured, pl. 1, fig. 6 ; F. P. SMITH, J. Quekett Club 1904, t. ix.
- Wixia*, def. and key of the Centr.-Amer. sp., p. 484, *W. gibbifera*, p. 485, pl. 46, fig. 1, *W. bituberosa*, p. 485, *W. clivosa*, p. 485, pl. 46, figg. 2 & 3, *W. rufa*, p. 486, pl. 46, fig. 5, *W. turrigera*, p. 486, pl. 46, fig. 7 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arach.-Aran. ii*.
- W. globosa*, Mexico, p. 486, pl. 46, fig. 5, *W. subrufa*, Guatemala, p. 486, pl. 46, fig. 6, *W. sicula*, Mexico, p. 487, pl. 46, fig. 8 ; id. t. c. **n. spp.**

Mimetidae.

- Ero tuberculata* de Geer and *aphana* Walck., note on, p. 556, pl. 14, fig. 23, *E. ligurica*, Liguria (San Remo), p. 543, pl. 14, fig. 3 ; KULCZYNSKI, *Fragmenta i*, **n. sp.**

- E. nicoleti*, Chili (la Herradura prov. Coquimbo), p. 96 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Mimetus maculosus, New Zealand (Jenolan Caves dist.), p. 330, figg. 40, 41, 42 ; RAINBOW, Rec. Austral. Mus. v, **n. sp.**

Thomisidæ.

- Apollophanes (Cleocnemis) texana*, Texas, p. 113 ; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
Coriarachne nigrostriata E. Sim., new descript., p. 283, E. SIMON, Mission Pavie iii.
Dicaa multimaculata, W. Australia (Perth), p. 106, figg. 30 & 31 ; RAINBOW, Rec. Austral. Mus. v, pt. 2, **n. sp.**
Mecaphesa perkinsi, Sandwich Islands, p. 342 ; E. SIMON, Fauna Hawaiiensis iii, **n. sp.**
Misumessus n. g. (type *Misumena oblonga* Keyserl.), p. 112, *M. pallidulus*, p. 112 ; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
Monæses paradoxus Lucas, from Centr. Abyss., p. 443 ; E. SIMON, Bull. Mus. Paris 1904, No. 7.
Philodromoides n. gen., p. 305, *P. pratariæ*, N. America, p. 305, text-fig. ; T. H. SCHEFFER, Canad. Ent. xxxvi, No. 10, **n. sp.**
Philodromus floridensis, Florida (Lake Worth), p. 133 ; BANKS, P. Ac. Philad., Jan. 1904, **n. sp.**
P. moestus, California (Santa Clara County), p. 353, pl. 39, figg. 26-30 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Synæma rufithorax, Sandwich Islands, p. 342 ; E. SIMON, Fauna Hawaiiensis iii, **n. sp.**
S. opulentum E. Sim., new descript. and fig., p. 283, pl. 16, fig. 7 ; E. SIMON, Mission Pavie iii.
Thomisus caffer, Zoutpansberg, p. 69 ; E. SIMON, Rev. Suisse Zool. 1904, **n. sp.**
T. albobirtus E. Sim., from Herrer valley, p. 443 ; E. SIMON, Bull. Mus. Paris 1904, No. 7.
Tibellus vossioni E. Sim., from Dagota valley, p. 443 ; E. SIMON, t. c.
Tmarus minutus, Washington, p. 112 ; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
Xysticus texanus, Texas (San Antonio), p. 112 ; BANKS, t. c. **n. sp.**
X. modestus, Kansas, p. 257, pl. 17, fig. 1 ; T. H. SCHEFFER, Ent. News Philad. xv, **n. sp.**

Clubionidæ.

- Agræca lusatica* L. Koch, synonym. and descript., p. 393 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
Anahita unifasciata, Belg. Congo, p. 445 ; E. SIMON, Bull. Mus. Paris 1904, No. 7, **n. sp.**
Anyphæna articulata var. *obscura* Lebert, descript., p. 390 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
A. verrilli, Bermuda Isl., p. 270, text-fig. ; N. BANKS, Tr. Connect. Ac. xi, **n. sp.**
Aysha orlandensis Tullgren = *Anyphæna gracilis* Hentz, p. 121 ; BANKS, P. Ac. Philad., Jan. 1904.
Clubiona deterrima, Norway, p. 10 ; E. STRAND, Forh. Selsk. Christian. 1904, No. 5, **n. sp.**
C. stagnalis n. nom. for *Cl. grisea* Thorell, Menge, Cambr., E. Simon, p. 557, *C. tridens* Menge = *C. reclusa* Cambr. ; KULCZYNSKI, Fragmenta i.
Cluilius see *Philisca*.

- Corinnomma formiceforme*, near Sydney, p. 335, pl. 46, figg. 10, 11, 12 ; W. J. RAINBOW, Rec. Austral. Mus. v, pt. 5, 1904, **n. sp.**
- Eutichurus insulanus*, Bermudas and Hayti, p. 270 ; N. BANKS, Tr. Connect. Ac. xi, **n. sp.**
- Gayenna californica*, California (Mill Valley, Palo Alto), p. 338, pl. 38, fig. 2 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- G. trimaculata*, Chili, la Herradura prov. Coquimbo, p. 102 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904.
- Heteropoda pressula* E. Simon, new descript., p. 285 ; E. SIMON, Mission Pavie iii.
- H. venatoria* L. (*regia* Fabr.), from Bermuda Islands, p. 274 ; N. BANKS, Tr. Connect. Ac. xi.
- Micaria norvegica*, Norway, p. 13 ; E. STRAND, Forh. Selsk. Christian. 1904, No. 5, **n. sp.**
- Micrommata vittigerum* E. Simon, from Abyssinia (Gofa), p. 443 ; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Edignatha sima* E. Sim., new descript., p. 286 ; E. SIMON, Mission Pavie iii.
- Olbophthalmus* **n. nom.** for *Olbus* E. Simon (Hist. Nat. Ar., nec *Olbus* E. Simon 1880), p. 98 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904.
- Olbus*, note on genus, p. 98 (foot note) ; E. SIMON, t. c.
- Philisca*, note on gen. *Philisca* and *Cluilius*, p. 100, *P. (Cluilius) chilensis* Nic., new descript., p. 100, *P. (Cluilius) accentifera*, la Herradura prov. Coquimbo, p. 101 ; E. SIMON, t. c. **n. sp.**
- Pæcilipta venusta*, near Sydney, p. 333, pl. 46, figg. 7, 8, 9 ; W. J. RAINBOW, Rec. Austral. Mus. v, pt. 5, 1904, **n. sp.**
- Polybetes delfini*, Punta Arenas, p. 99 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Syspira pallida*, New Mexico, p. 111 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
- Terupis* **n. gen.**, p. 103, *T. bicolor*, Chili, la Herradura prov. Coquimbo, p. 103 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Thargalia floridana* Banks, suppl. descript., p. 124 ; BANKS, P. Ac. Philad., Jan. 1904.
- Torania gloriosa*, suppl. descript. and fig., p. 285, pl. 16, fig. 2 ; E. SIMON, Mission Pavie iii.
- Trachelas californica*, California (Mill Valley, Palo Alto), p. 339, pl. 40, fig. 47 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Trachelas*, key to Chilean spp., p. 106, *T. altiformis* Nicolet, new descript., p. 104, *T. longitarsis*, Punta Arenas, p. 104, *T. virgatus*, la Herradura prov. Coquimbo, p. 105, text-fig. ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. spp.**

Agelenidae.

- Cybæus minor*, California (Claremont), p. 341, pl. 38, fig. 4, pl. 40, fig. 44 ; BANKS, P. Calif. Ac. iii, No. 3, **n. sp.**
- Mevianes* **n. gen.**, p. 110, *M. delfini*, Punta Arenas, p. 111, *M. wilsoni*, Allen Gardiner, p. 111 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. spp.**
- Pacificana* **n. gen.**, p. 65, *P. cockayni*, Bounty isl., p. 66, text-fig. ; H. R. HOGG, Ann. Nat. Hist. (7) xiii, **n. sp.**
- Pionaces* **n. gen.**, p. 107, *P. major*, Punta Arenas, p. 108, text-fig. ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Porteria* **n. g.**, p. 109, *P. albopunctata*, Punta Arenas, p. 109, text-fig. ; E. SIMON, t. c. **n. sp.**
- Tegenaria urbana* E. Simon, suppl. descript., p. 402, pl. v, fig. 29 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- T. domestica* Cl. (*Derhami* Scopl.) from Bermuda Isl., p. 271 ; N. BANKS, Tr. Connect. Ac. xi.

Pisauridæ.

- Pisauridæ*, key to North Amer. genera, p. 313; MONTGOMERY, P. Ac. Philad. March 1904.
- Dolomedes sexpunctatus* Hentz, suppl. descript., p. 654, pl. 29, fig. 5; MONTGOMERY, t. c. Oct. 1903.
- Dolomedes*, key to North Amer. spp., p. 314, *D. sexpunctatus* Hentz, p. 314, pl. 20, fig. 34, *fontanus* Emerton, p. 316, pl. 20, figg. 35-37, *urinator* Hentz (= *tenebrosus* Hentz, Emerton, Stone), p. 317, *idoneus* Montg., suppl. descript. and synon., p. 319; MONTGOMERY, t. c. 1904.
- Euprosthenops bayoanianus* Br. Cap., from Belg. Congo, p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Pisaurina mira* Walckenaer, suppl. descript. and synon., p. 320, MONTGOMERY, P. Ac. Philad. March 1904.

Lycosidæ.

- Lycosidæ*, key to North American genera, p. 264; MONTGOMERY, P. Ac. Philad. March, 1904.
- Allocosa* n. g. (type *Lycosa funerea* Hentz), p. 113; BANKS, J. N. York Ent. Soc. xii, June, 1904.
- A. degesta*, Louisiana, p. 287; CHAMBERLIN, Canad. Ent. 36, n. sp.
- Aulonia humicola* Montg., suppl. descript. p. 265, pl. 20, fig. 33; MONTGOMERY, P. Ac. Philad. March, 1904.
- Geolycosa* n. gen. (type *G. latifrons*), p. 292, key to N. Amer. spp. p. 293, *G. baltimoriana* Keyserl. p. 297, *arenicola* Scudd. (= *L. nidifex* Marx), p. 299, *carolinensis* Walck. p. 299, suppl. descript. and synon., *G. texana*, Texas, p. 293, pl. 18, figg. 13 & 14, *latifrons*, Texas, p. 295, pl. 19, figg. 15-18; MONTGOMERY, t. c. n. spp.
- Lycosa* (*Trochosa*) *personata* L. Koch, p. 416, pl. 6, figg. 37 & 38, *L. renidens* E. Simon, p. 420, pl. 6, fig. 46, suppl. descript.; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- L. terricola* var. *pallida*, Montenegro (Bukovica), p. 3; A. NOSEK, Arachn. Monteneg. n. var.
- L. urbana* Cambr., from Madi-Bari and Niam-Niams reg., p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- L. inominata* E. Simon, new descript. p. 287; E. SIMON, in Mission Pavie iii.
- L. perkinsi*, Sandwich islds., p. 343; E. SIMON, Fauna Hawaiiensis iii, n. sp.
- L. sepulchralis* Montg., p. 645, pl. 19, fig. 1, *charonoides* Montg., p. 646, pl. 19, fig. 7, *nidicola* Emert., p. 647, *avara* Keyserl., p. 650, pl. 19, fig. 2, *pratensis* Emert., p. 651, pl. 19, fig. 8, suppl. descript. and fig., *L. contestata*, Woods Hole, p. 649, pl. 19, fig. 4; MONTGOMERY, P. Ac. Philad. Oct. 1903, n. spp.
- Lycosa*, key to North Amer. spp., p. 277, *L. nigra* Stone, p. 285, *charonoides* Montg., p. 286, *lepida* Keyserl. (= *L. communis* Emert.), p. 287, *punctulata* Hentz, p. 288, *ocreata* Hentz (= *L. stonei* Montg. nec *L. rufa* Keyserl.), p. 288, *scutulata* Hentz, p. 289, *bilineata* Emerton (= *L. ocreata pulchra* Montg.), p. 290, *L. inhonesta* Keyserl. (= *L. nidicola* Emert. and *L. tigrina* McCook), p. 290, *L. relucens* Montg. (= *L. verisimilis* Montg.), p. 292, suppl. descript. and synonyms, *L. enepigynata*, Texas, p. 279, pl. 18, figg. 1 & 2, *insopita*, Texas, p. 280, pl. 18, figg. 3 & 4, *antelucana*, Texas, p. 282, pl. 18, figg. 5 & 6, *McCooki*, Texas, p. 283, pl. 18, fig. 11; MONTGOMERY, P. Ac. Philad. March, 1904, n. spp.
- L. wacondana*, Kansas, p. 260, pl. 17, fig. 7; T. H. SCHEFFER, Ent. News Philad. xv, n. sp.

- L. nidicola* = *L. helluo* Walck., *L. kochi* Emert. and Banks (non Keyserling) = *L. pulchra* Keyserl., *L. purcelli* Montgomery = *L. kochi* Keyserl., synonyms, *L. permunda*, Kansas, p. 286; R. V. CHAMBERLIN, Canad. Ent. 36, n. sp.
- L. angusta* Tullgren = *L. lenta* Hentz, *L. albopuncta* Tullgren = *L. riparia* Hentz, *L. (Pirata) loennbergi* Tullgren = *Sosippus floridanus* E. Simon, p. 121; BANKS, P. Ac. Philad. Jan. 1904.
- L. scutata* Hentz = *L. rabida* Walckenaer, *L. babingtoni* Blackwall = *L. helluo* Walckenaer, synonyms, p. 134, *L. posticata*, Florida, p. 134, *L. hentzi*, Florida, p. 135; BANKS, t. c. Jan. 1904, n. spp.
- L. baltimoriana* Keyserl. and *L. lenta* Hentz, note on, p. 114, *L. apicata*, Arizona and Texas, p. 114; N. BANKS, J. N. York Ent. Soc. xii, June 1904, n. sp.
- L. pacifica*, California, p. 354, pl. 38, fig. 6; N. BANKS, P. Calif. Ac. 3, No. 13, 1904, n. sp.
- L. atlantica* Marx, from Bermuda Isl., p. 274; N. BANKS, Tr. Connect. Ac. xi.
- L. porteri*, Chili (Los Perales), p. 112, *L. delfini*, Chili (Los Perales), p. 113; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, n. spp.
- Ocyale atalanta* Aud., from Abyssinia (Mt. Fické), p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Pardosa (Lycosa) danica*, Denmark, p. 321; W. SORESENSEN, Ent. Meddel. 1904 (2), heft 1, n. sp.
- P. pedestris* E. Simon, supp. descript., p. 427, pl. 6, fig. 34, *P. schenkeli*, Valais (Arolla), p. 429, pl. 6, figg. 42-44; R. DE LESSERT, Observ. Ar. du bassin du Léman, n. sp.
- P. irretita* E. Simon, new descript., p. 288; E. SIMON, in Mission Pavie iii.
- P. lapidicina* Emerton, p. 262, pl. 19, fig. 6, and *P. pallida* Emerton, p. 653, pl. 19, fig. 3, supp. descript.; MONTGOMERY, P. Ac. Philad., Oct. 1903.
- Pardosa*, key to N. Amer. spp., p. 267, *P. pallida* Emert. p. 271, *lapidicina* Emert. p. 272, *scita* Montg. p. 272, *minima* Keyserl. p. 273, *glacialis* Thorell, p. 274, *groenlandica* Thorell, p. 274, *tachypoda* Thorell, p. 275, *nigripalpis* Emert., p. 275, supp. descript., *P. pauxilla*, Texas, p. 268, pl. 19, figg. 21-23, *P. mercurialis*, Texas, p. 270, pl. 19, figg. 20 & 21; MONTGOMERY, P. Ac. Philad. March, 1904.
- P. bilobata* Tullgren = (probably) *Pirata insularis* Emert. p. 148, *P. emertoni* n. nom. for *P. pallida* Emert., præocc., p. 175, *P. banksi* n. nom. for *P. littoralis* Banks, præocc., p. 175; R. V. CHAMBERLIN, Canad. Ent. xxxix.
- P. bilobata* Tullgren = *Lycosa milvina* Hentz, p. 121, *P. floridana*, Florida (Entreprise), p. 136; BANKS, P. Ac. Philad. Jan. 1904, n. sp.
- P. parvula*, Florida, p. 114, *texana*, Texas, p. 115; BANKS, J. N. York Ent. Soc. xii, June 1904, n. spp.
- P. atromedia*, California, p. 355, pl. 39, fig. 32; BANKS, P. Calif. Ac. 3, No. 13, 1904, n. sp.
- Pirata liber* Montg., supp. descript., p. 654; MONTGOMERY, P. Ac. Philad. Oct. 1903.
- Pirata*, key to N. Amer. spp., p. 309, *P. marxi* Stone (= *P. piraticus* Emerton nec Clerk), p. 309, *elegans* Stone, *nigromaculatus* Montg., p. 310, *liber* Montg., p. 311, supp. descript. and syn., *P. sedentarius*, Texas, p. 312, pl. 19, figg. 28 & 29; MONTGOMERY, P. Ac. Philad. March, 1904, n. sp.
- P. vacourana* Scheffer = *P. agilis*, p. 148; R. V. CHAMBERLIN, Canad. Ent. xxxvi.
- P. aspirans*, Virginia and N. Carolina, p. 286; R. V. CHAMBERLIN, t. c. n. sp.

- P. californica*, California (Coulterville), p. 356, pl. 39, fig. 13; BANKS, P. Calif. Ac. 3, No. 13, **n. sp.**
- Scaptocosa* **n. gen.** type *Lycosa arenicola* Scudder, p. 113; BANKS, J. N. York Ent. Soc. xii, June, 1904.
- Schizocosa* **n. gen.** type *Lycosa ocreata* Hentz, p. 177, incl. also *L. venustata* Hentz (= *Pardosa bilineata* Emert. and *Lycosa ocreata pulchra* Montg.), and *L. humuli* Banks; R. V. CHAMBERLIN, Canad. Ent. 36 (p. 148).
- Trochosa singoriensis*, distribution in Hungary; CSIKI, pp. 290–294 & 303, Allatt. Kozl. Magyar Tars. iii.
- Trochosa*, key to N. Amer. spp., p. 301, *T. pratensis* Emert., p. 303, *contestata* Montg., p. 303, *avara* Keyserl., p. 304, *purcelli* Montg. (= *Lycosa kochi* Emert. nec Keyserling + *L. nigraurata* Montg.), *cinerea* Fabr., p. 305, *frondicola* Emert., p. 306, *sepulchralis* Montg., p. 307, *rubicundula* Keyserl. (= *polita* Emert.), p. 307, *sublata* Montg., p. 308, supp. descript. and synonyms, *T. noctambula*, Texas, p. 301, pl. 38, figg. 9 & 10; MONTGOMERY, P. Ac. Philad. March, 1904, **n. sp.**
- Trabœa aurantiaca* Emert., supp. descript., p. 266, pl. 20, figg. 31 & 32, MONTGOMERY, t. c.

Oxyopidæ.

- Peucetia arabica* E. Sim., from Abyssinia (Dagota) and *P. casseli* E. Sim., from Congo (Iribou), p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Oxyopodon rufocaligatum* E. Sim., from Ogaden, p. 443; E. SIMON, t. c.
- Oxyopes dubourgi*, Madi-Bari and Niam-Niams reg., p. 446; E. SIMON, t. c. **n. sp.**
- O. laminatus* Tullgren = *O. scalaris* Hentz, p. 121; BANKS, P. Ac. Philad. Jan. 1904.
- O. salticus* Hentz, from Bermuda Isl., p. 274; N. BANKS, Tr. Connect. Ac. xi.

Salticidæ.

- Anoka (Wala) vernalis* Peckh., from Bermuda Isl. p. 274; N. BANKS, Tr. Connect. Ac. xi.
- Attulus histrio* E. Simon, supp. descript. and fig., p. 437, pl. 6, figg. 47 & 48; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Dendryphantès gallicus* **n. nom.** for *D. medius* C. Koch and *D. rudis* E. Simon; W. SORENSSEN, Ent. Meddel. 1904 (2), heft. 1.
- D. floridanus*, Florida (Altoona), p. 138; BANKS, P. Ac. Philad. Jan. 1904. **n. sp.**
- D. guttatus*, California (Santa Rosa Isl.), p. 358, pl. 41, fig. 51; BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. sp.**
- Epiblemum palpalis* (sic), California (Palo Alto), p. 360, pl. 39, fig. 31; BANKS, t. c. **n. sp.**
- Eremattus* **n. gen.** type *Marpissa albopilosa* Banks, p. 117; BANKS, J. N. York Ent. Soc. June 1904.
- Evophrys lætata*, Chili (Los Perales) p. 114; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Heliophanus dubourgi*, Dougon Valley, p. 446, figg. 1 & 2 (p. 445), *H. didieri*, Madi-Bari and Niam-Niams reg., p. 447, figg. 3 & 4 (p. 446); E. SIMON, Bull. Mus. Paris 1904, No. 7, **n. spp.**
- Icius floridanus* Banks = *Icius wickhami* Peckham, p. 138; BANKS, P. Ac. Philad. Jan. 1904.
- I. texanus*, Texas, p. 116; BANKS, J. N. York Ent. Soc. xiii, June 1904, **n. sp.**

- Menemerus (Tapinattus) melanognathus* Lucas, from Bermuda Isl., p. 275; N. BANKS, Tr. Connect. Ac. xi.
- Metacurba similis*, California (Los Angeles), p. 360, pl. 38, fig. 9; BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. sp.**
- Myrmarachne manducator* Westw., pl. xvi, fig. 8, *M. paviei* E. Sim., new descript. p. 290; E. SIMON, Mission Pavie iii.
- Pariona africana*, Centr. Abyss., p. 447; E. SIMON, Bull. Mus. Paris 1904, No. 7, **n. sp.**
- Pellenes pacifica*, California (S. Francisco), p. 359, pl. 39, fig. 37, *P. speciosa*, California (Claremont), p. 359, pl. 40, fig. 39; BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. spp.**
- P. calcaratus*, N. America, p. 117, *P. californicum* (sic), California (San Diego), p. 117, *P. arizonensis*, Arizona, p. 118, *P. tarsalis*, California (San Pedro), p. 118; BANKS, J. N. York Ent. Soc. xii, June, 1904, **n. spp.**
- P. cristatus*, change of marking in the male, p. 32; EMERTON, Psyche xi, 1904.
- Phidippus ferrugineus*, Kansas, p. 258, pl. 17, figg. 2 & 3; T. H. SCHEFFER, Ent. News Philad. 15, **n. sp.**
- Ph. clarconensis* Tullgren = *insolens* Hentz, p. 121, *P. oaklandensis* Tullgren = *cardinalis* Hentz, p. 121; BANKS, P. Ac. Philad. Jan. 1904.
- P. basalis*, Arizona, p. 115; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
- Plexippus paykulli* Aud. from Bermuda Island, p. 275; BANKS Tr. Connect. Ac. xi.
- Saitis barbipes* E. Simon, p. 545, p. 14, figg. 15 & 16, new descript. and fig., *S. græca*, Græcia (Patras and Corfu), p. 545, pl. 14, fig. 17, *S. taurica*, S. Russia, p. 546, pl. 14, fig. 18; W. KULCZYNSKI, Fragmenta i, **n. spp.**
- Sidusa arizonensis*, Arizona, p. 116, *S. borealis*, New York, p. 116; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. spp.**
- Thyene squamata* E. Sim. and *T. bucculenta* Gerst. from Centr. Abyss., p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Viciria scoparia* E. Sim., new descript., p. 291; E. SIMON, Mission Pavie iii.

V. SOLIFUGÆ.

- Dæsia*, key to Asiat. spp., p. 410, *D. rossica*, transcasp. Reg., p. 406, *D. zarudnyi*, S. Persia, p. 408, *D. persica*, S. Persia, p. 409, *D. dmitrievi*, Abyssinia, p. 410, *D. magnifrons*, N. E. Africa, p. 411; A. BIRULA, Annuaire Mus. St. Petersb. ix, 1904, **n. spp.**
- Galeodida*, classif. of family, p. 391, key to genera, p. 393; BIRULA, t. c.
- Galeodes*, key to Centr.-Asia spp., p. 402, *G. bacillifer* Pocock, n. descript. p. 395, *G. schach*, Teheran, p. 394, *G. caspius przewalskii*, Chinese Turkest., p. 396, *G. bacillatus*, W. Persia, p. 397, *G. setipes*, Centr. As. (Margelhan), p. 398, *G. auronitens*, W. Persia, p. 399, *G. levipalpis*, Ferghanathal, p. 400; BIRULA, t. c. **n. spp.** and **n. subsp.**
- Galeodopsis* **n. gen.** (near *Paragaleodes*), typ. *Galeodes cyrus* Pocock, p. viii; BIRULA, t. c. Nouv. No. 12.
- Gluiopsia rufescens persica*, S.W. Persia, p. 412, *nigrocincta*, W. Persia, p. 413; BIRULA, t. c. **n. subsp.** and **n. sp.**
- Paragaleodes fulvipes*, S. Persia, p. 400, *P. melanopygus*, N. Persia, p. 401; BIRULA, t. c. **n. spp.**
- Rhagodes aureus* Pocock, new descript. p. 414, *R. aureus setipes*, W. Persia, p. 415, *R. leucopygus*, W. Persia, p. 415; BIRULA, t. c. **n. subsp.** and **n. sp.**

VI. CHERNETES (Pseudoscorpiones).

- Atemnus floridanus* Tullgren = *A. elongatus* Banks, p. 141; BANKS, P. Ac. Philad. Jan. 1904.

- Chelifer cimicoides* Fabr., p. 6, *C. cyrneus* L. Koch, p. 8, *C. cancrooides* L., p. 11, synonym and description; ELLINGSEN, Norske Pseudosc. ii, 1903.
C. cancrooides L. from Abyssinia, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.
C. michaelsoni E. Simon, note on p. 4, *C. echinatus*, S. Patag. p. 2; ELLINGSEN, Boll. Mus. Torino xix, No. 480, **n. sp.**
Chernes nodosus, note on, p. 292; KEW WALLIS, Naturalist 1904.
Garypinus patagonicus, Patag. (Rio Sta Cruz), p. 5; ELLINGSEN, Boll. Mus. Torino xix, No. 480, **n. sp.**
Ideobisium, list and observ., p. 4, *I. strandi* Ell., supp. description, p. 12; ELLINGSEN, Norske Pseudosc. ii, 1903.
Obisium muscorum Leach, note on, p. 13, *O. brevifemoratum*, Norway, p. 13; ELLINGSEN, t. c. **n. sp.**

VII. OPILIONES.

The Order *Opiliones* particularly the suborder *Cyphophthalmi*; general structure of Opiliones with special regard to *Cyphophthalmi* pp. 4-67. Systematic part pp. 75-110; H. J. HANSEN and W. SORESENSEN, On two orders of Arachnida.

Opiliones, synopsis of order, groups and families of Central American fauna; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, p. 548.

Op. cyphophthalmi.

Cyphophthalmi (suborder), characterization of suborder, p. 86, family *Sironoidæ*, p. 87, subfam. *Stylocellini* consp. gen. p. 88, gen. *Stylocellus* Westw. and consp. spp., p. 88 & 89, *S. beccarii* Th. p. 90, pl. i, fig. 1, *S. thorelli* **n. sp.**, Sumatra, p. 91, pl. i, fig. 2, *S. weberi* **n. sp.**, Sumatra, p. 92, pl. ii, fig. 1, *S. modestus* **n. sp.**, Celebes, p. 93, pl. ii, fig. 2, *S. sulcatus*, Java, p. 94, pl. ii, fig. 3, *S. sumatranus* Westw. p. 96, pl. ii, fig. 4, *S. pococki* **n. sp.**, Borneo, p. 97, pl. ii, fig. 5, gen. *Miopsalis* Thorell, p. 99, *Ogovia* **n. gen.**, p. 99, *O. grossa* **n. sp.**, Ogoué, p. 100, pl. ii, fig. 6, pl. iii, fig. 1, gen. *Pettalus* Thorell, p. 102, *P. cimiciformis* Cambr. p. 102, pl. iii, fig. 2, *P. brevicauda* Pocock, p. 104, pl. iii, fig. 3, *Purcellia* **n. gen.**, p. 105, *P. illustrans* **n. sp.**, p. 106, pl. iii, fig. 4, pl. iv, fig. 1, gen *Siro* Latr., p. 107, *S. rubens* Latr., p. 108, pl. iv, fig. 2, *S. duricorius* Joseph, p. 109, pl. iv, fig. 3, pl. v, fig. 1, *Parasiro* **n. gen.**, p. 110 (typ. *Siro corsicus* E. Sim.), *P. corsicus* E. Simon, p. 111, pl. v, fig. 2; *Gibocellum sudeticum* Stecker, species non existens, pp. 67-75; H. J. HANSEN & W. SORESENSEN, On two orders of Arachnida etc. Cambridge, 1904.

Op. mecostethi.

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Cosmetinæ subfam., key to genera of Centr.-Amer. fauna; id. t. c. p. 550.

Cynorta, def. and key to Centr.-Am. spp., pp. 554 & 555, *C. albipunctata*, Costa Rica, p. 556, pl. 52, fig. 9, *C. bipunctata*, Costa Rica, p. 556, pl. 52, fig. 10, *C. biguttata*, Costa Rica, p. 557, pl. 52, fig. 11, *C. bituberculata*, Guatemala, p. 557, pl. 52, fig. 12, *C. longipes*, Costa Rica, p. 557, pl. 52, fig. 13, *C. longispina*, Costa Rica, p. 558, pl. 52, fig. 14, *C. dentipes*, Guatem., Costa Rica, p. 558, pl. 52, fig. 15, *C. annulipes*, Guatemala, p. 558, pl. 52, fig. 16, *C. conigera*, Costa Rica, p. 559, pl. 52, fig. 17; FR. CAMBRIDGE, t. c. **n. spp.**

- Erginoides* n. g. (*Cosmetidæ*) p. 553, *E. tarsalis*, Costa Rica, p. 554, pl. 52, fig. 7; FR. CAMBRIDGE, t. c. n. sp.
- Erginus* E. Sim., def. and key to Centr.-Amer. spp., p. 559; FR. CAMBRIDGE, t. c.
- Metacynorta* n. g. (*Cosmetidæ*) p. 554, *M. gracilipes*, Guatemala, p. 554, pl. 52, fig. 8; FR. CAMBRIDGE, t. c. n. sp.
- Metavonones*, n. gen. (*Cosmetidæ*) p. 553, *M. hispidus*, Mexico, p. 553, pl. 52, fig. 6; FR. CAMBRIDGE, t. c. n. sp.
- Paravonones* n. g. (*Cosmetidæ*), *P. biserratus*, Mexico, p. 551, pl. 52, fig. 1, *P. quadratus*, Mexico, p. 551, pl. 52, fig. 2, *P. claviger*, Mexico, p. 552, pl. 52, fig. 3, *P. compressus*, Guatem., Costa Rica, p. 552, pl. 52, fig. 4, *P. incrassatus*, Mexico, p. 553, pl. 52, fig. 5; FR. CAMBRIDGE, t. c. n. spp.
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Op. plagiostethi.

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- Astrobus argentatus* L. Koch = *A. helleri* Auss. juv., p. 79; KULCZYNSKI, t. c. 1904.
- Caddo glaucopsis*, N. York, p. 254, fig. 4, *C. boopis*, N. York, p. 255; C. R. CROSBY, J. N. York Ent. Soc. xii, No. 4, n. spp.
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- Dicranolasma scabrum* Herbst, age characters, p. 77, pl. 9, figg. 1 & 2; W. KULCZYNSKI, Ann. Mus. Hungar. ii, 1904.
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- Gagrella*, sexual and age characters, p. 82, pl. 9, figg. 9, 10 & 11; KULCZYNSKI, t. c.
- Ischyropsalis manicata* L. K., age characters, p. 78, pl. 9, figg. 5 & 6; KULCZYNSKI, t. c.
- Liobunum agile* Canestr = *L. dorice* Can. juv., p. 79; KULCZYNSKI, t. c.
- L. calcar* Wood, note on, p. 256; C. R. CROSBY, J. N. York Ent. Soc. xii, No. 4.
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VIII. RICINULI.

Ricinuli (family *Cryptostemmatidae*), general structure of this order, pp. 115–134, systematic position, pp. 136–143, characterization of order and family, p. 144, key to genera, p. 145, gen. *Cryptostemma* Guérin, def. and key to spp., p. 146, *C. crassipalpe* n. sp., Centr. Afr., p. 147, pl. 7, fig. 1, *C. plebejum* n. sp., Centr. Afr., p. 148, pl. 7, fig. 2, *C. westermanni* Guérin, p. 149, pl. 7, fig. 3, pl. 8, fig. 1, *C. afzeli* Thorell, p. 150, pl. 8, fig. 2, *C. sjöstedti* n. sp., Centr. Afr., p. 151, pl. 8, fig. 3, *C. karschi* n. sp., Centr. Afr., p. 153, pl. 8, fig. 4, pl. 9, fig. 1, gen. *Cryptocellus* Westw., p. 154, *C. fædus* Westw., p. 155, pl. 9, fig. 2, *C. simoni* n. sp., Brazil, p. 156, pl. 9, fig. 3 ; H. J. HANSEN & W. SÖRENSEN, On two orders of Arachnida etc., Cambridge, 1904.

IX. ACARI.

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Acaropsis, Moquin-Tandon (typus *Tyroglyphus laboulbeni*), note on, p. 154 ; OUDEMANS, Ent. Ber. Nederland. No. 17.

A. eruditus Oudm., note on, p. 163 ; OUDEMANS, t. c. No. 18.

Acarus denticulatus L., synonymy. note, p. 505 ; TRÄGARDH, Zool. Anz. xxvii.

A. serotinae, New York, p. 124 ; BEUTENMULLER, Amer. Mus. J. iv, (?) n. sp.

Acheles n. gen. (*Cheletinae*) p. 101, *A. mirabilis* Nederl., p. 101 ; OUDEMANS, Ent. Ber. Nederland. No. 14, n. sp.

Actineda agilis Banks, from Bermuda Island, p. 275 ; N. BANKS, Tr. Connect. Ac. xi.

Aleurobius farinae L., note on, p. 102 ; OUDEMANS, t. c.

Allothrombium n. gen. (typus *Acarus tinctorius* L.), p. 251, *A. pergrande*, Italy, p. 252 ; A. BERLESE, Redia i, fasc. ii, n. sp.

Ameroseius n. gen. (type *Seius echinatus* Koch), p. 258, *A. lœlaptoides*, Italy, p. 259, *borealis*, Norvegia, p. 259 ; A. BERLESE, t. c. n. spp.

Analgesidae, key to genera, p. 87 ; BANKS, A treatise on the Acarina.

Angelina thori, Norvegia, p. 275, *A. mamillaris*, Italia, p. 275 ; A. BERLESE, Redia i, fasc. ii, n. spp.

Anætus sumatrensis, Sumatra, on *Sphaeridium dimidiatum*, p. 103, *A. discrepans*, Bremen, on *Halictus 4-notatus*, p. 103 ; OUDEMANS, Ent. Ber. Nederland. No. 14, n. spp.

A. discrepans Oudem., p. 132, pl. 9, figg. 61–64, *A. sumatrensis* Oudem., p. 134, pl. 9, figg. 65 & 66, n. descript. and fig. ; OUDEMANS, Tijdschr. Ent. 1904.

Antennophoridae, key to genera, p. 387, *Antennophorus*, charact. and key to spp., pp. 387–390, text-figg., *A. uhlmanni*, p. 391, *A. grandis*, Russia, p. 392, pl. 12, fig. 95, pl. 13, fig. 95, pl. 14, fig. 99 and text-figg. (n. sp.), *A. pubescens*, p. 393, pl. 13, fig. 98, pl. 14, figg. 101 & 102 and text-fig., *A. foreli*, p. 395, pl. 13, figg. 96 & 97 ; A. BERLESE, Redia i, fasc. ii, n. sp.

- Antennocelæno* **n. subg.** of genus *Celænopsis*, type *C. braunsi* Wasmann ; A. BERLESE, t. c. p. 268.
- Antennurella* **n. gen.** (*Antennophoridae*) p. 267, type *A. trouessarti*, Brasilia, on *Passalus*, p. 268 ; A. BERLESE, t. c. **n. sp.**
- Argas andresi*, Italy, p. 704 ; MARIANI MARIO, Zool. Anz. xxvii, **n. sp.**
- A. mombata*, characters, synonymy &c. ; CHRISTY & POCKOCK, Thompson Yates Lab. Rep. v, pp. 187-189, pl. xv.
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- Aturus spatulifer*, Bohème, p. 471 ; R. PIERSIG, t. c. **n. sp.**
- Bdellidae*, key to genera, p. 16 ; BANKS, A treatise on the Acarina.
- B.*, synon. notes, pp. 69-79 ; THOR, SIG., Zool. Anz. xxviii.
- Bdella californica*, California (Claremont), p. 366, pl. 41, fig. 60 ; BANKS, P. Calif. Ac. iii, No. 13.
- Brachypodopsis* **n. gen.** p. 34, *B. gracilis*, Germany, p. 34 ; R. PIERSIG, Ber. Annaberg Ver. 1903, **n. sp.**
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- Chelenotus* Trouessart, note on, p. 163 ; OUDEMANS, Ent. Ber. Nederland. No. 18.
- Cheletes eruditus* (Schrank), note on, p. 101 ; OUDEMANS, t. c. No. 14.
- Cheletes* Latreille (type *Acarus eruditus*), note on, p. 154, *C. saccardianus* Berl. 1886 = *C. ornatus* Can. et Fans. 1877, p. 154, *C. berlesi* **n. nom.** for *C. ornatus* Berlese (non Canestrini), p. 154 ; OUDEMANS, t. c. No. 17.
- C. sœvus* **n. nom.** for *C. eruditus* protonympha Oudem., p. 160, *C. stenurus* **n. nom.** for *C. eruditus*, femina monstrosa, Oudem., p. 160, *C. schneideri* Oud., note on, p. 160, *C. ferox* Berl. and Trouessart, on *Cercopis bercklegi*, p. 162, *C. trouessarti* Oud., note on, p. 162, *C. prumptus*, N. Guinea, p. 160, *C. fortis*, N. Guinea, p. 160, *C. audax*, N. Guinea, p. 162, *C. alacer*, Colombia, p. 162, *C. acer*, Colombia, p. 162 ; OUDEMANS, t. c. No. 18, **n. spp.**
- Cheletia* Haller, typ. *C. laureata* Haller = *Acarus squamosus* de Geer, note on, p. 154, *C. flabellifera* Michel, note on, p. 162 ; OUDEMANS, t. c. Nos. 17 & 18.
- Cheletoides* **n. gen.** type *Syringophilus uncinatus* Haller, p. 154 ; OUDEMANS, t. c. No. 17.
- Cheletomimus* **n. gen.** p. 163, type *C. trux*, p. 163 ; OUDEMANS, t. c. No. 18, **n. sp.**
- Cheletomorpha* **n. gen.** for *Cheletes venustissimus* C. Koch, p. 162 ; OUDEMANS, t. c. No. 18.
- Cheletophanes* **n. gen.** for *Cheletes montandoni* Berl., p. 162, *C. montandoni* on *Aradus varius* in Valachia, p. 162 ; OUDEMANS, t. c. No. 18.
- Cheletopsis*, **n. gen.** type *Cheletes norneri* Popp. p. 163, *C. major* Trouessart on *Dendrochelidon mystacea* of N. Guinea, p. 163 ; OUDEMANS, t. c. No. 18.
- Cheyletidae*, key to genera, p. 19 ; BANKS, A treatise on the Acarina.
- Chirithoptes* (corrig. *Crithocoptes*) *monounguiculolus* Geber, note on, p. 163 ; OUDEMANS, Ent. Ber. Nederland. No. 18.
- Chromotydeus* **n. gen.** (type *Penthaleus ovatus* Koch) ; A. BERLESE, Redia i, fasc. ii, p. 252.
- Cillibano* Heyden, gen. characters, key to subgen. and species, p. 329,

- C. comata* Leon, p. 330, pl. 7, fig. 3, *C. hirticoma* Berl., p. 331, pl. 7, fig. 6 ; A. BERLESE, t. c.
- Cosmolaelaps* **n. subgen.** of *Laelaps*, pp. 13 & 14, *C. sculpiger* Berl., new descript., p. 19 ; A. BERLESE, Zool. Anz. 1904.
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- Dameosoma corrugatum*, p. 273, *bellum*, p. 274, *asperatum*, p. 274, Italia ; A. BERLESE, t. c. **n. spp.**
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- Discopoma hirticoma*, Texas, in nets of *Eciton schmitti*, p. 246, *D. pulcherrima*, Italy, p. 247, *D. splendida* Kram. var. *porticensis*, Italy, p. 247 ; A. BERLESE, t. c. **n. sp.** and **n. subsp.**
- D.*, p. 332, *splendida* Kram., p. 333, pl. 7, fig. 11 ; A. BERLESE, t. c.
- Disparipes silvestrii*, Italy, p. 22, *silvestrii* var. *rotundata*, p. 23, *circularis*, Italy, p. 23 ; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Echinomegistus* **n. gen.** (typus *Antennophorus wheeleri* Wasm.), p. 266 ; A. BERLESE, Redia i, fasc. ii.
- Echinomegistus*, charact., p. 396, text-fig., *E. wheeleri*, p. 398, pls. 13, fig. 103, 14, figg. 103 & 104 ; A. BERLESE, t. c.
- Echinoseius* **n. gen.** (type *Seius hirsutigenus* Berl.) p. 177 ; RIBAYA COSTANTINO, Riv. Patol. Veg. x.
- Emeus inexpectatus*, Borkum isl., p. 91, *E. major*, Holl., p. 100 ; OUDEMANS, Ent. Ber. Nederland. Nos. 13 & 14.
- Epitrimerus anthrisci*, on *Anthriscus silvestris*, p. 16 ; LINDROTH, Acta Soc. Faun. Fenn. xxvi, No. 4, **n. sp.**
- Eremeus confervæ* Schrank, note on, p. 102 ; OUDEMANS, Ent. Ber. Nederland. No. 14, id. p. 125, pl. 7, figg. 46 & 47, id. Tijdschr. Ent. 1904.
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- Eriophyes linderae*, India (Kursong), p. 427, fig. ; A. CORTI, Zool. Anz. xxvii
- E. gossypii*, California, p. 55, pl. 2, fig. 4 ; BANKS, J. N. York Ent. Soc. xii, **n. sp.**
- E. dispar*, morphology of, p. 60 ; KÜSTER, Marcellia iii, fig. 3.
- Eriophyes campanulae*, on *Campanula rotundifolia*, p. 4, fig., *E. dianti*, on *Dianthus deltoides*, p. 12, *E. leontodontis*, on *Leontodon autumnale*, p. 14, **n. spp.**, *E. pini* Nal. p. 7, *tenuis* Nal. p. 8, *drabæ*, p. 8, *quadri-setus* F. Thom., p. 7, *similis* Nal. p. 8, *ribsaameni* Nal. p. 9, *galiobius* Can. p. 9, *centaureæ* Nal. p. 10, *pilosella* Nal. p. 11, *ribis* Nal. p. 11, *longisetus*, p. 12, *salicobius*, p. 17, note on ; LINDROTH, Acta Soc. Faun. Fenn. xxvi, 1904.
- Erythreus ignotus*, p. 91, *E. glaber*, p. 92, *E. flavus*, p. 92, Borkum Isl. ; OUDEMANS, Ent. Ber. Nederland. No. 13, **n. spp.**
- E. germanicus* Oud. p. 122, pl. 7, figg. 28 & 29 ; OUDEMANS, Tijdschr. Ent. 1904.
- Erythrocheylus* **n. gen.** for *Pseudocheylus erythroides* Leon. (from America), p. 27, *E. littoralis*, Italy, p. 27 ; A. BERLESE, Zool. Anz. 1904, **n. sp.**
- Eugamasus epsilon*, Bremen, p. 654 ; VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. sp.**
- Eulaelaps* **n. subgen.** of *Laelaps* (type *Laelaps stabularis* Can.), p. 13 ; A. BERLESE, Zool. Anz. 1904.
- Eulais (Eylais)* gener. characters, p. 101 and text-fig. ; C. F. GEORGE, Naturalist 1904, p. 101.
- E. mrázeki*, Montenegro ; THON, SB. Bohmisch. Ges. 1903, No. 19, **n. sp.**

- E. angustifrons* Choperi, p. 47, fig. 1, *E. skorikovi*, p. 49, fig. 2, *E. saratovi*, p. 50, fig. 3, *E. elliptica*, p. 52, fig. 4, *E. krendovski*, p. 53, fig. 5, *E. gigas*, p. 55, fig. 6, Russia gov. of Saratov; R. PIERSIG, Annuaire Mus. St. Petersb. ix, **n. spp.**
- Eupodidae*, key to genera, p. 13; BANKS, a treatise on the Acarina.
- Eviphis* **n. gen.** p. 242, *E. uropodinus*, Italia, p. 243, *E. tubicolus*, Cape Colony in nidis termitis, p. 243, *E.* (? or new gen. *Iphidozercon*) *gibbus* Italy, p. 246; A. BERLESE, Redia i, fasc. ii, **n. spp.**
- Eylais bicornuta*, Irish, p. 200, pl. 10, figg. 1 & 2; J. N. HALBERT, Irish Natural. xiii, No. 9, **n. sp.**
- E. nulliporus*, p. 73; S. THOR, Nyt Mag. Naturv. t. 41, **n. sp.**
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- G. myrmecophili*, characters of the, pp. 205-323, text-fig.; A. BERLESE, Redia i, fasc. ii.
- Gamasolaspis* **n. subg.** of *Holostaspis* (type *H. gamasoides* Berl.); A. BERLESE, t. c. p. 265.
- Gamasiphis* **n. gen.** (type *Gamasus pulchellus* Berl.), p. 261; A. BERLESE, t. c.
- Gamasus* (*Pergamasus*) *noster*, p. 236, *G. theseus* (*Gamasus crassipes adultus* Berlese olim) var. *alpina*, p. 236, *G. alpestris*, p. 236, *G. pugilator*, p. 236, *G. parvulus*, p. 237, *G. misellus*, p. 237, *G. oxygynellus*, p. 237, *G. runcatellus*, p. 237, *G. decipiens*, p. 238, *G.* (*Hologamasus*) *pollicipatus*, p. 238, *G.* (*Amblygamasus*) *sagitta*, p. 238, *G. fimetorum*, p. 238, *G. distinctus*, p. 239, *G. neglectus*, p. 239, *G. intermedius*, p. 240, *G. hortivagus*, p. 240, *G. reticulatus*, p. 240, Italy, *G. thoni*, p. 239, *G. obesus*, p. 239, Corfu; A. BERLESE, t. c. **n. spp.**
- G.* (*Eug.*) *immanis*, Norway, p. 262, *G.* (*Eug.*) *chortophilus*, Italy, p. 262, *G.* (*Eug.*) *excurrens*, Norway, p. 263, *G.* (*Pergamasus*) *runciger*, Norway, p. 263, *G. crassipes* L. *brevicornis*, Norway, p. 263; A. BERLESE, t. c. **n. spp.** and **n. var.**
- G. pusillus* Berl., note on, p. 278, A. BERLESE, t. c.
- G. californicus*, California (Claremont), p. 368, pl. 41, figg. 54, 55 & 58; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Glycyphagus cadaverum* (vulgo *spinipes*), note on, p. 102, *G. setosus* C. L. Koch, note on, p. 102, *G. sculptilis* Meg. (type of *G. domesticus*), p. 102, *G. troupeau* **n. nom.** for *G.* sp. Troupeau 1879, p. 102, *G. michaeli* **n. nom.** for *G. spinipes* Michael, p. 103, *G. domesticus concretipilus*, Holl. p. 102, *G. domesticus unisetus*, Holl. p. 102, *G. burchanensis*, Borkum Isl., p. 103, *G. privatus*, Holl. p. 102, *G. fustifer*, Holl. p. 103; OUDEMANS, Ent. Ber. Nederland. No. 14, **n. subspp.** and **n. spp.**
- G. setosus* C. Koch, p. 127, pl. 8, figg. 51-53, *G. fustifer* Oudem. p. 129, pl. 8, figg. 54-56, *G. burchanensis* Oudem. p. 131, pl. 9, figg. 57-60, OUDEMANS, Tijdschr. Ent. 1904.
- Glycyphagus spinipes* and *ansor* infesting furniture; RANKIN, pp. 380 & 381, Tr. Glasgow Soc. vi.
- Greenia sjöstedti*, Kameroun, p. 152, pl. 2, figg. 11-15; TRÄGARDH, Ent. Tidskr. xxv, **n. sp.**
- G. perkinsi* and *alfkeni*, symbiosis between these Mites and *Cophthorthosoma*, pp. 137-139; OUDEMANS, Zool. Anz. xxvii, 1903.
- Halacaridae*, key to genera, p. 41; BANKS, A treatise on Acarina.
- Hamaphysalis aculeata* on *Tragulus meminna* of India, p. 255; L. LAVARRA, Boll. Soc. zool. Ital. xiii, **n. sp.**
- Holaspulus* **n. subg.** of *Holostaspis* (type *H. tenuipes* Berl.), p. 265; A. BERLESE, Redia i, fasc. ii.

- Holostaspella* **n. subgen.** for *Holostaspis sculpta*, Cape Colony, in nidis *Termitidis tubicolæ*, p. 241 ; A. BERLESE, t. c. **n. sp.**
- Holostaspis mandibularis*, p. 263, *H. posteroarmatus*, p. 263, *H. subbadius*, p. 264, *H. penicilliger*, p. 264, Italy, *H. longispinosus* Kr. *asper*, Corfu, p. 264, *H. longulus hortorum*, Italy, p. 265, *H. (Gamosholaspis) gamasoides*, Italia, p. 265, *H. (Holaspulus) tenuipes*, Italia, p. 266 ; A. BERLESE, t. c. **n. spp** and **n. var.**
- H. pisentii* Berl., note on, p. 279 ; A. BERLESE, t. c.
- Hoploderma phyllophorum*, p. 275, *H. clavigerum*, p. 275, Italy ; A. BERLESE, t. c. **n. spp.**
- Hoplolaelaps* **n. subgen.** of gen. *Laelaps* (typ. *Laelaps hermaphrodita* Berl.), p. 14 ; A. BERLESE, Zool. Anz. 1904.
- Hoplomegistus* **n. gen.** (type *Megistanus armiger*), p. 266 ; A. BERLESE, Redia i, fasc. ii.
- Hydrachnide*, the Servian, with descriptions, in Servian, of certain species that may be new (*Limnesia serbica*, *dentata* etc.) though not so indicated ; GJORGJEVIC, Ghlas Srpska Ak. lxvii, pp. 153-189.
- Hydrachnide*, key to genera, p. 37 ; BANKS, A treatise on the Acarina.
- Hydrachnide*, nomencl. rem. ; THOR, Nyt Mag. Naturv. xli.
- Hydrachna distincta* Koen., p. 200, pl. 10, fig. 4 ; J. H. HALBERT, Irish Natural. xiii, No. 9.
- H. tectocervix*, Borkum Isl., p. 92 ; OUDEMANS, Ent. Ber. Nederland. No. 13, **n. sp.**
- Hydrogamasus silvestrii*, Italy, p. 27 ; A. BERLESE, Zool. Anz. 1904, **n. sp.**
- Hydryphantas*, p. 74 ; S. THOR, Nyt Mag. Naturv. xli, **n. var.**
- H. jujuyensis*, Rep. Argent. prov. Jujuy, p. 395, figg. 1 & 2 ; E. NORDEN-SKIÖLD, Arkiv Zool. i, **n. sp.**
- Hygrobatas dodecaporus*, Rep. Argent. prov. Jujuy, p. 396 ; E. NORDEN-SKIÖLD, t. c. **n. sp.**
- Hypoaspis* Canestr., note on, p. 14 ; A. BERLESE, Zool. Anz. 1904.
- H. pavidus* (Koch) Oudem. and *H. cossi* (Dugès) Oudem., synonymy. note, p. 276 ; A. BERLESE, Redia i, fasc. ii.
- H. ometes* Holl., p. 100 ; OUDEMANS, Ent. Ber. Nederland. No. 14, **n. sp.**
- H. lubrica*, Bremen, p. 654 ; VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. sp.**
- Hypochthonius minutissimus*, Italy, p. 252 ; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Imparipes histicrinus*, Italy, p. 24 ; A. BERLESE, Zool. Anz. 1904, **n. sp.**
- Iphidioides* **n. nom.** for *Iphis* C. L. Koch (præocc. Leach 1817) et *Eumæus* C. L. Koch (præocc. Hubner 1816) et *Emeus* Mégnin (lapsus for *Eumæus*), type *Iphis ostrinus* C. L. K., p. 140, *I. concentricus* (loc. ?), p. 140 ; OUDEMANS, Ent. Ber. Nederland. No. 16, **n. sp.**
- Iphidiopsis* instead of *Iphiopsis* Berlese, p. 140 ; OUDEMANS, t. c.
- Iphidulus* **n. gen.**, p. 176, *I. communis*, Italy, p. 176, *I. communis hederæ*, p. 176, *I. longicuadus*, Italy, p. 176 ; RIBAYA C., Riv. Patol. Veg. x, **n. spp.** and **subsp.**
- Ixodide*, biology of, p. 569, 4 text-figg. ; P. MÉGNIN, J. Anat. Physiol. xl.
- Ixodide*, key to subfam. and gen., pp. 45-47 ; BANKS, A treatise on the Acarina.
- Ixodidés*, note sur les, I. Sur la classification des *Ixodide*, p. 444, II. Note sur des espèces connues, p. 450, *I. thoracicus* K. *euryptidis* Markell, *fodiens* Murray, p. 451, *ovatus* Neum. p. 452, *bifurcatus* Neum., *brunneus* K. p. 455, III. Espèces nouvelles, *I. australiensis*, Austr. occid. (on *Canis*) p. 457, *I. boliviensis*, Bolivia (on *Speothas venaticus*), p. 458, *I. japonicus*, Tokio, p. 458, *I. nitens*, Christmas Isl. (on *Mus macleari*) p. 459, *I. rubicundulus*, Cape Colony (on *Ovis*), p. 461, *I. sculptus*, California, p. 462 ; L. G. NEUMANN, Arch. parasit. 1904, text-fig., **n. spp.**
- Ixodes ricinus*, p. 335, *tenuirostris* Neum. p. 336, *acuminatus* Neum. p. 336 parasit. on rats ; G. TIRABOSCHI, Arch. parasit. 1904, text-fig.
- I. pilosus*, note on, p. 291 ; MALLY, Agric. J. Cape Good Hope, t. xxv.

- I. anatis*, N. Zeal. (on *Anas superciliosa*), p. 201, pl. 10; CHILTON, Tr. N. Zealand Inst. xxxvi, **n. sp.**
- I. californicus*, California, Claremont (on *Toxostoma crissale*), p. 269, pl. 41, fig. 57; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Laelaps elegantulus*, Italy, p. 241 (in nidis *Tapinomadis erratici*); A. BERLESE, Redia i, fasc. ii, **n. sp.**
- L. maximus*, Montevideo (on *Hesperomys vulpinus*), p. 259, *L. spiniferus*, W. Africa, p. 260, *L. pontiger*, Italy, p. 260, *L. stabularis* var. *proxima*, Norvegia (on *Lemmus*), p. 260; A. BERLESE, t. c. **n. spp.** and **n. var.**
- Laelaptidae*, key to genera, p. 401, *Laelaps*, charact. and key to subgen., pp. 402-404, text-fig., subgen. *Hypoasis*, key to spp. p. 405, *L. laevis*, p. 406, pls. 15, fig. 116, 16, figg. 126 & 127, 20, fig. 116, *L. myrmecophilus*, p. 409, pls. 16, figg. 128 & 129, 20, fig. 128, *L. myrmophilus*, p. 410, pls. 15, figg. 117-119, 20, fig. 117, *L. canestrinii*, p. 412, pl. 15, figg. 120-122, *L. acutus*, p. 413, pls. 14, fig. 111, 15, figg. 112 & 113, *L. elegantulus*, p. 414, pl. 16, figg. 130-132, subgen. *Cosmolaelaps*, key to spp. p. 416, *L. cuneifer*, p. 416, pls. 15, figg. 123 & 124, 16, fig. 125, var. *americana*, Connecticut, p. 418 (**n. var.**), *L. vacuus*, p. 419, pls. 14, fig. 107, 15, fig. 114, var. *ensigera*, p. 420, pl. 14, fig. 108, var. *scalpiger*, p. 421, pl. 14, fig. 110, Italy (**n. var.**), *L. ornatus*, p. 421, pls. 18, fig. 164, 19, figg. 164 & 165, subgen. *Laelaspis*, key to spp. p. 422, var. *equitans*, p. 423, pl. 17, figg. 137-139, var. *longitarsa*, Italy, p. 424 (**n. var.**), *L. humeratus*, Russia, p. 425, pl. 18, figg. 151-153 (**n. sp.**), *L. finitimus*, p. 426, pl. 17, figg. 143 & 144, *L. ovisugus*, p. 427, pl. 17, figg. 145-147, subgen. *Oolaelaps*, key to spp. p. 428, *L. oophilus*, p. 428, pl. 17, figg. 140-142, *L. montanus*, Italy, p. 430, pls. 17, fig. 148, 18, fig. 149 (**n. sp.**), *L. parvulus*, Russia, p. 431, pls. 16, fig. 135, 18, fig. 150 (**n. sp.**), subgen. *Androlaelaps*, p. 432, *L. karavaiewi*, Russia, p. 432, pl. 16, figg. 133 & 134; A. BERLESE, t. c. **n. spp.** and **var.**
- Laelaps versteegi*, Surinam, parasitic on *Mus*, p. 160; OUDEMANS, Ent. Ber. Nederland. No. 18, **n. sp.**
- L. versteegi*, Surinam, p. 223, text-fig.; OUDEMANS, Notes Leyden Mus. xxiv, **n. sp.** (?)
- L. pilosula*, California (Sta Rosa Isl.), p. 368, pl. 41, fig. 49; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- L. stabularis* Koch, *L. echidninus* Berl. p. 342, *L. agilis* Koch. p. 344, parasitic on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- L. stabularis* K., on *Mus decumanus*, *L. echidninus* Berl., on *Mus rattus* and *decumanus*, pp. 88-97; G. TIRABOSCHI, Boll. Soc. zool. Ital. xiii.
- Laelaspis n. subgen.* of *Laelaps* (typ. *Laelaps astronomicus* Koch), pp. 13 & 14, *L. ovisugus*, Italy, p. 14, *finitimus*, Italy, p. 15; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Lebertia pavesii* R. Monti, new descript., p. 240, *L. papillosa* Piersig, observ., p. 245, *L. longipes*, from Lago Devero (Italy) p. 242, pl.; R. MONTI, Rend. Ist. Lombardo, ser. 2, t. xxxvii.
- Leiognathus blanchardi*, Europa, on *Arctomys marmotta*, p. 558; TROUESSART, Arch. parasit. viii, No. 4, **n. sp.**
- Leptus autumnalis*, note on, p. 363; FRIES, Munchen Med. Wochenschr. 51.
- Liacarus alatus*, Italy, p. 273; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- L. modestus*, California (Los Angeles), p. 365, pl. 41, figg. 53 & 59; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Limnesia cornuta*, p. 143, *paucispina*, p. 152, N. America; WOLCOTT, Tr. Amer. micr. Soc. xxiv, **n. spp.**
- Listrophorus leukarti* Pagenst., p. 327, parasitic on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- Lohmanella paradoxa n. nom.* for *Lohmannia* Neresheimer (nec Michael), p. 137, *L. catenata*, p. 137; NERESHEIMER, Zeitschr. wiss. Zool. t. 76.

- Macrocheles tridentinus* Can. and *vagabundus* Oudem. synonym. note, p. 277; A. BERLESE, Redia i, fasc. ii.
- Megalolaelaps hirtus*, Brazil on *Neleus interruptus*, p. 261; A. BERLESE, t. c. **n. sp.**
- Megistanus medius*, p. 266, *grandis*, p. 267, W. Africa, A. BERLESE, t. c. **n. spp.**
- Megisthanus floridanus*, Florida, p. 145; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- Melichares* Hering, note on, p. 140, *M. agilis* Hering, note on, p. 140; OUDEMANS, Ent. Ber. Nederland. No. 16.
- Metaparasitus suboles* Bremen, p. 655; VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. sp.**
- Mideopsis crassipes*, England, p. 107; C. D. SOAR, J. Quekett Club, Nov. 1904.
- M. spinipes*, Rep. Argent. (prov. Jujuy), p. 296, fig. 3; E. NORDENSKIÖLD, Arkiv Zool. i, **n. sp.**
- Myobia musculi* Schrank, p. 332, *affinis*, *ensifera* Popp. *lemnisca* C. Koch, p. 332; G. TIRABOSCHI, Arch. parasit. 1904.
- Myocoptes musculinus* Clap., p. 327, *M. tenax* Meg. p. 328, parasitic on rats; G. TIRABOSCHI, t. c.
- Myonyssus* **n. gen.**, p. 337, *M. decumani*, p. 337; G. TIRABOSCHI, t. c. **n. sp.**
- Myrmecoleichus*, p. 434, *M. coronatus*, p. 435, pl. 18, figg. 154 & 155; A. BERLESE, Redia i, fasc. ii.
- Myrmoleichus* **n. gen.**, p. 244, for *M. coronatus*, Italy (in nidis formicarum), p. 244; A. BERLESE, t. c. **n. sp.**
- Myrmonyssus* **n. gen.**, p. 16, *M. diplogenus*, Italy, p. 16, *M. brachiatus*, Italy, p. 17, *M. acuminatus*, Italy, p. 18; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Myrmonyssus*, charact. and key to spp., pp. 436 & 437, *M. diplogenus*, p. 438, pl. 18, figg. 162 & 163, *M. antennophoroides*, p. 439, pls. 17, fig. 158, 18, fig. 158, 19, fig. 161, *M. flexuosus*, p. 440, 16, fig. 136, *M. brachiatus*, p. 441, 18, figg. 156 & 157, 19, fig. 156, *M. acuminatus*, p. 441, pls. 17, fig. 166, 19, figg. 166-168; A. BERLESE, t. c.
- M. antennophoroides*, Italy, on *Comptonotus aethiops*, p. 244; A. BERLESE, t. c. **n. sp.**
- Myrmozercon*, p. 444, *M. brevipes*, p. 445, pls. 18, fig. 169, 19, figg. 169-172, 20, fig. 169; A. BERLESE, t. c.
- Neoberlesia*, p. 442, *N. equitans*, p. 443, pls. 19, fig. 182, 20, figg. 182-184; A. BERLESE, t. c.
- Neopodocinum vosi* Oud., p. 117, pl. 6, figg. 5-10, *N. nederveeni* Oud., p. 118, pl. 6, figg. 11-17, *N. (Laelaps) jaspersi* Oud., p. 119, pl. 6, figg. 18-20; OUDEMANS, Tijdschr. Ent. 1904.
- Neopodocinum* Oud., note on, p. 100, *N. vosi* on *Catharsius molossus* from Sumatra, p. 100; OUDEMANS, Ent. Ber. Nederland. No. 14, **n. sp.**
- Neoseius* **n. gen.** (type *Uroseius novus* Oud.); OUDEMANS, t. c. No. 14.
- Nephrophages sanguinarius* Miyake et Scriba, note on, p. 153; OUDEMANS, t. c. No. 17.
- Notaspis voigtsi* Oud., p. 126, pl. 8, figg. 48-50; OUDEMANS, Tijdschr. Ent. 1904.
- Notoedres alepis* Raillet, p. 325, parasit. on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- Ololaelaps* **n. gen.** (type *Laelaps venetus* Berl.), p. 260, *O. confinis*, Norvegia, p. 261; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Oribatida*, key to genera, p. 71; BANKS, A treatise on the Acarina.
- Oribata californica*, California (Mt. Shasta), p. 367, pl. 41, fig. 52; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Oribatula connexa*, Italy, p. 273; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Oribates myrmobates*, Italy, p. 25; A. BERLESE, Zool. Anz. 1904, **n. sp.**

- Pachylaelaps*, charact. and key to subgen. with text-figg. 450 & 451, *Onchodellus* (**n. subgen.**), *reticulatus*, Italy, p. 452, pls. 19, figg. 173-175, 20, fig. 179; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- P. angulatus*, Corfu, p. 245; A. BERLESE, t. c. **n. sp.**
- Parasitus*, note on several species recently described by Dr Oudemans, pp. 279 & 280; A. BERLESE, t. c.
- P. poppei* Oud., note on, p. 114, pl. 4, figg. 1 & 2; OUDEMANS, Tijdschr. Ent. 1904.
- P. minor* Berl., note on, p. 100, *P. primitivus*, p. 140, *P. delta*, *P. iota*, *P. cappa*, p. 153; OUDEMANS, Ent. Ber. Nederland. Nos. 14-17, **n. spp.**
- P. bremensis*, p. 651, *consanguineus*, p. 651, *eta*, p. 652, *congener*, p. 652, *beta*, p. 652, *alpha*, p. 653, *theta*, p. 653, *zeta*, p. 653, *setosus*, p. 653, *consors*, p. 654, Germany (Bremen); VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. spp.**
- Pergamasus gamma*, Bremen, p. 654; VOIGTS & OUDEMANS, t. c. **n. sp.**
- Pediculoides histricinus*, Italy, p. 24, *P. modestus*, Italy, p. 24; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Phaulocylliba* **n. gen.**, p. 270, *P. ventricosa*, Norvegia, p. 270; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Phaulodinychus* **n. gen.** (type *P. repletus* Berl.), p. 269, *P. repletus*, Norvegia, p. 269, *P. simplex*, Italy, p. 269; A. BERLESE, t. c. **n. spp.**
- Phthiracarus cryptopus*, California (Claremont), p. 367, pl. 41, fig. 50; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Phyllocoptes azaleæ*, Holland, on *Azalea indica*; NALEPA, Anz. Ak. Wiss. 1904, p. 335, **n. sp.**
- Phytoptus*, galls of phyt. with pl.; MELVILLE THURSTON COOK, Ohio Natural. v, No. 6.
- Physalozircon* **n. gen.** for *Antennophorus raffrayi* Wasmann; A. BERLESE, Redia i, fasc. ii, p. 246.
- Physalozircon*, charact. text-fig., p. 399, *P. raffrayi*, p. 400, pls. 13, fig. 105, 14, fig. 105; A. BERLESE, t. c.
- Phytoseius* **n. gen.** (type *Seius plumifer* Can. et Fanz.), p. 177, *P. horridus*, Italy, p. 178, *P. finitimus*, Italy, p. 178; RIBAYA C., Riv. Patol. Veg. x, **n. spp.**
- Pionia carnea* C. Koch, note on, p. 245; RINA MONTI, Rend. Ist. Lombardo, Ser. ii, t. xxxvii.
- Pæcilocheirus* Canestrini 1882 = *Iphidiosoma* Berl. 1892 (type *Holoaspis fimetarius* Muller), p. 140, *Pæcilocheirus* Berlese (type *Acarus fucorum* de Geer.), p. 140; OUDEMANS, Ent. Ber. Nederland. No. 16.
- Polyaspis patavinus repandus*, Italy, p. 273; A. BERLESE, Redia i, fasc. ii, **n. var.**
- Pseudofeltria* **n. gen.**, p. 105, *P. scourfieldi*, England, p. 105, text-fig. 1; C. D. SOAR, J. Quekett Club, Nov. 1904, **n. sp.**
- Psorogates simplex* Tyrrel, p. 330, parasit. on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- Rhaphignathus ruber* C. L. Koch = *Acarus denticulatus* L., p. 565; TRÄG-ARDH, Zool. Anz. xxvii.
- Rhipicephalus appendiculatus* and other species, conveying cattle fever in Africa; THEILER, Rep. S. Afric. Ass. ii, pp. 201-220.
- R. hæmatophysaloides* Supino, p. 454, *R. perpulcher* Gerst. p. 455, note on, *R. nitens*, Cape Colony, p. 462, *P. ziemanii*, Cameroon, p. 464; L. NEUMANN, Arch. parasit. 1904, **n. spp.**
- Rhyncholophus gracilipes*, California (Santa Rosa Island), p. 265, pl. 41, fig. 56; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- R. punctatus*, Florida, p. 143; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- Sarcoborus* **n. nom.** for *Sarcopterus* Giebel (1871), p. 154; OUDEMANS, Ent. Ber. Nederland., No. 17.
- Sarcoptidae*, key to genera, p. 97; BANKS, A treatise on the Acarina.

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- Scutovertex schneideri*, Borkum Island, p. 92; OUDEMANS, Ent. Ber. Nederland. No. 13, **n. sp.**
- Sebaia n. gen.* (near *Pachygnathus*), p. 101, *S. rosacea*, Holl., p. 102; OUDEMANS, t. c. No. 14, **n. sp.**
- S. rosacea* Oud., note on, p. 122, pl. 7, figg. 28-37; OUDEMANS, Tijdschr. Ent. 1904.
- Seiulus levis*, Bremen, p. 654; VOIGTS & OUDEMANS, Zool. Anz. xii, 1904, **n. sp.**
- S. plumosus* Oudem., synonymy. note, p. 276; A. BERLESE, Redia i, fasc. ii.
- S. curtipilus*, Italy, p. 175, *S. soleiger*, Italy, p. 176; RIBAYA C., Riv. Patol. Veg. x, **n. spp.**
- Serrarius longicornis*, Italy, p. 252, *S. major*, Corfu, p. 252; A. BERLESE, Redia i, fasc. ii, p. 252, **n. spp.**
- Sperchon glandulosus* Koenike, note on, p. 246; RINA MONTI, Rend. Ist. Lombardo, Ser. ii, p. xxxvii.
- Sphaerolaelaps n. gen.* (*Laelaptidae*) type *Laelaps holotyroides*, p. 243; A. BERLESE, Redia i, fasc. ii.
- Sphaerolaelaps*, p. 447, *S. holotyroides*, p. 448, pl. 20, figg. 180 & 181, *S. calcariger*, p. 449, pl. 19, fig. 176, pl. 20, figg. 177 & 178; A. BERLESE, t. c.
- Spharoseius n. gen.*, type *S. ecitonis*, p. 433, *S. ecitonis*, p. 433, pl. 18, figg. 159 & 160; A. BERLESE, t. c.
- Tarsonemidae*, key to subf., p. 75; BANKS, A treatise on the Acarina.
- Tarsonemus latus*, California, p. 55, pl. 2, fig. 3; BANKS, J. N. York Ent. Soc. xii, **n. s.**
- Tectocephus minor*, Italy, p. 252; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Tenuipalpus californicus*, California, p. 55, pl. 2, fig. 2; BANKS, J. N. York Ent. Soc. xii, **n. sp.**
- T. cuneatus*, injuries to lemons in Sicily; CAVARA & MOLLIKA, Atti Acc. Gioen. (4) xvii, Mem. 2, 25 pp., 1 pl.
- Tetranychidae*, key to genera, p. 23; BANKS, A treatise on the Acarina.
- Tetranychoides n. g.*, p. 54, *T. californica*, California, p. 54, pl. 2, fig. 1; BANKS, J. N. York Ent. Soc. xii, **n. sp.**
- Tetranychus telarius*, note on, p. 246; A. TULLGREN, Ent. Tidskr. 1903.
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- T. holosericeum* L., *poriceps* Oudm., *tectovertex* Oudm. and *striaticeps* Oudm., larva, p. 119; OUDEMANS, Ent. Ber. Nederland. No. 15.
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- Trachyuropoda*, note on, p. 248, *T. wasmanniana*, Luxemburg in nidis *Lasii mixti*; A. BERLESE, t. c. **n. sp.**
- T. cristiceps* (Cn.), *T. imperforata*, Italy, p. 271; A. BERLESE, t. c. **n. var.**
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- n. var.**, Russia, p. 369, pl. 11, fig. 70, var. *insularis* Corsica, p. 369, *T. riccardiana*, p. 370, pl. 12, figg. 74-78; A. BERLESE, t. c.
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- Urodiscella*, charact. and key to spp., p. 339, *U. ricasoliana*, p. 340, pl. 8, figg. 21 & 22, *U. alophora*, p. 341, pl. 8, fig. 23, *philoctena*, p. 342, pl. 8, figg. 19 & 20; A. BERLESE, t. c.
- Urophis* **n. gen.**, p. 245, *U. striatus*, p. 245, *U. scabratus*, p. 245, Italy; A. BERLESE, t. c. **n. spp.**
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- U. obovata*, p. 337, pl. 8, figg. 16, 17 & 18, *notabilis*, p. 338, pl. 8, figg. 24 & 25; A. BERLESE, t. c.
- Uropitella* **n. gen.** (type *Uropoda paradoxa* Berl.), p. 249, *U. oratula*, p. 250, *U. conspicua*, Italy, *U. minutissima*, Italy and Nederland in nidis formicæ *Lasius niger* and *Tapinoma erraticum*, p. 250, *U. pennsylvanica*, Pennsylvania, in nidis *Formicæ subsericeæ* et *rubræ*, p. 251; A. BERLESE, t. c. **n. spp.**

- U. minutissima villosella*, Russia on *Lasius flavus*, p. 272; A. BERLESE, t. c. **n. var.**
- U.*, charact. and key to spp., pp. 343 & 344, *U. leonardiana*, p. 345, pl. 8, figg. 28 & 29, *U. ovatula*, p. 346, pl. 8, figg. 26 & 27, *U. pennsylvanica*, p. 347, pl. 9, figg. 39 & 40, *U. minutissima*, p. 348, pl. 9, figg. 35, 36, 37 & 38, *U. villosella*, Italy, p. 349, pl. 9, fig. 31 (**n. var.**); A. BERLESE, t. c.
- Uropolyguspis*, p. 384, *U. hamuliferus* Mich. p. 385, pl. 13, figg. 93 & 94; A. BERLESE, t. c.
- Urotrachytes* **n. gen.** (type *Glyphopsis formicarie* Michael), p. 271; A. BERLESE, t. c.
- U.*, p. 381, *formicarius* Lubbo. p. 382, pl. 13, figg. 91 & 92; A. BERLESE, t. c.
- Varroa* **n. gen.** (*Laelaptinae*), p. 160, *V. jacobsoni*, on *Apis indica* in Java, p. 160; OUDEMANS, Ent. Ber. Nederland. No. 18, **n. sp.**
- V.*, **n. gen.** (?), p. 216, *V. jacobsoni*, Java, p. 217, text-fig.; OUDEMANS, Notes Leyden Mus. xxiv, **n. sp.** (?).
- Zercon trigonus*, p. 268, *Z. ornatus*, p. 269, Italy, *Z. triangularis perforatulus*, p. 269, Italy; A. BERLESE, Redia i, fasc. ii, **n. spp.** and **n. var.**

X. TARDIGRADA.

Eggs of Tardigrada; RICHTERS, Ber. Senckenberg Ges. 1904.

- Diaphascon spitzbergense*, Spitzberg, p. 172; RICHTERS, Zool. Anz. xxvii, **n. sp.**
- Echiniscus conifer*, Lugano, p. 73, pl. 5, fig. 8; RICHTERS, Ber. Senckenberg. Ges. 1904, **n. sp.**
- E. blumi*, Spitzberg, p. 172, *E. wendti*, Spitzberg, p. 172, *E. oihonnæ*, Spitzberg, p. 172; RICHTERS, Zool. Anz. xxvii, **n. spp.**
- Macrobotus coronifer*, Tromsø, p. 171, *M. coronifer*, p. 171, and *M. echinogenitus*, p. 169, Spitzberg; RICHTERS, t. c. **n. spp.**

XI. PENTASTOMIDA.

[Vacant.]

XII. MYRIOPODA AND PROTO- TRACHEATA.

BY

F. SILVESTRI.

CONTENTS.

	Page		Page
MYRIOPODA.		8. South and Central America and West Indies	8
I. TITLES	2	9. Australasia	8
II. BIOLOGY.		10. Atlantic Islands	9
1. Morphology & Classifi- cation	6	11. Indian Ocean Islands	9
2. Physiology	6	12. Pacific Ocean Islands	9
3. Reproduction & Deve- lopment	7	B. Geological	9
4. Bionomics	7	IV. SYSTEMATIC INDEX.	
5. Miscellaneous	7	Chilopoda	9
III. DISTRIBUTION.		Symphyla	12
A. Geographical	7	Pauropoda [Vacant]	
1. Arctic and Antarctic	7	Diplopoda	12
2. Europe and Mediterra- nean Islands	7	PROTOTRACHEATA.	
3. Asia (Palearctic)	8	I. TITLES	17
4. India and Further India	8	II. BIOLOGY	17
5. Malay Peninsula and Archipelago	8	III. DISTRIBUTION	17
6. Africa and Madagascar	8	IV. SYSTEMATIC INDEX	17
7. North America	8		

INTRODUCTION.

THE Record of Myriopoda for 1904 is in number of papers a little less than that for 1903 and contains also less interesting contributions to the knowledge of the group.

Amongst the papers on morphology, that of VERHOEFF (60 & 62) on the legs, and that of BÖRNER (5) on the same subject, are the most important. In anatomy and histology we mention the work of HENNINGS (28) on the Tömösvary-organe, and the research of LEGER & DUBOSCQ (38) on the structure of the intestine of *Julus* and *Polyxenus*. BOUIN (7) continues in 1904 the researches on the germinal cells of Chilopoda; BRÖLEMANN (14) writes on the copulatory appendages of some *Anocheta*.

The physiology of the ventral-nervous system of the Myriopoda has received an interesting contribution in the experiments of CARLSON (16); and HENNINGS (29) contributes also to the knowledge of the hearing-organ in Myriopoda.

The bionomic observations are almost restricted to a publication of HENNINGS (29) on the Glomerids. There are brief notes on the venom of Myriopoda, BRIOT (18), COUPIN (20); on the luminosity, DUBOIS (21).

The systematic index is scanty. The most important increase is in the *Scutigera*dæ, VERHOEFF (64); in the *Cambalidæ* there are descriptions of various species of Hawaiian *Dimerogonus* by SILVESTRI (49). ATTEMS (3 & 4), BRÖLEMANN (10-13), COOK (19), LIGNAU (39), SILVESTRI (52) have described various species and genera of Myriopoda, and SILVESTRI (50) has added also a new family (*Doderiidae*) to the Oniscomorpha with the Italian genus *Doderia*.

In the Prototracheata, BOUVIER (1) has published a very important work on the structure of the eggs.

MYRIOPODA.

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Morphology of the copulatory appendages in *Odontopyge*, BRÖLEMANN (12): in *Acanthiulus*, *Spiroboles*, *Rhinocricus*, *Trigonulus*, *Spirobolellus*, BRÖLEMANN (14).

Morphology of the Tömösvary-organ of the *Glomeridæ*, HENNINGS (28).

Morphology and muscles of the coxæ, sternites, maxillipedi and maxillæ of *Chilopoda*, VERHOEFF (62), of tarsus of *Chilopoda*, VERHOEFF (65).

Morphology of the genital zone of the *Chilopoda*, *Anomorpha* and *Scutigera*, VERHOEFF (63).

Segmentation and armature of the antennæ and legs in various stages of *Scutigera*, VERHOEFF (60 & 64).

Segmentation of legs of *Myriopoda* and their muscles and homology with the legs of the other Arthropods, BÖRNER (5).

Remark on the morphology of the antennæ in *Chilopoda* and *Diplopoda*, HENNINGS (29).

Insertion of muscles, brief note, STAMM (55).

Hearing-organs of the *Diplopoda* and *Chilopoda*, HENNINGS (29).

Morphology of the brain in *Lithobius* and *Julus*, HALLER (27).

Histology of the intestine of *Julus* and *Polyxenus*, LÉGER & DUBOSCQ (38).

Homology of the body segments in *Scolopendridæ* and *Japygidæ*, VERHOEFF (61); of the mouth parts in *Chilopoda* and *Insecta*, VERHOEFF (61).

Homology of the tracheal-gills of *Tæniopterix* with the coxal sacs of *Diplopoda*, LAUTERBORN (36).

Criticism on some points of the morphology of the *Myriopoda*, SILVESTRI (51 & 53), ROSSI (47).

2. *Physiology.*

Rate of propagation of the nervous impulse in the ventral nerve-cord; Reflex functions of the ventral nerve-cord in *Chilopoda* and *Diplopoda*, CARLSON (16).

On the movements of the legs in *Chilopoda* and *Diplopoda*, LANKESTER (35).

Experiment on the hearing organ of the *Myriopoda* (*Chilopoda* and *Diplopoda*), HENNINGS (29); Tömösvary-organ of the *Glomeridæ*, HENNINGS (28).

Venom of *Scolopendra morsitans*, experiments as to effects of; BRIOT (8).

Luminosity of *Myriopoda* refer, MOLISCH (41); of a Chilognate, ibidem; of *Geophilus*, BROCKHAUSEN (9).

Radio-activity and luminescence, DUBOIS (22).

3. *Reproduction and Development.*

Embryo development in *Chilopoda* extract, VERHOEFF (59).

Eggs and development of the *Glomeris marginata*, HENNINGS (29).

Development of the genital zone of the *Chilopoda*, *Anomorpha* and *Scutigera*, VERHOEFF (63).

Centrosome and centrioles of the male germinal cells of *Myriopoda* (*Geophilus*), BOUIN (7).

Constitution of the achromatic figure of the cytodiaeresis of *Geophilus linearis*, BOUIN (7).

Spermatogenesis of *Scolopendra* and *Lithobius*, PRENANT, BOUIN, MAILLARD (45).

Ovocyte of *Julus terrestris*, PRENANT, BOUIN, MAILLARD (45).

4. *Bionomics.*

Habitat of *Scutigera*, WILLIAMS (67).

Marine *Myriopoda*, LALOY (33).

Breeding season of *Myriopoda* in Cambridgeshire, SINCLAIR (54).

Breeding habits, *Fontaria indianæ*, MORSE (42).

Migration of *Diplopoda*, SINCLAIR (54).

Aliment, habitat, coupling, ovoposition and moult of the *Glomeris marginata*, HENNINGS (29).

Damages of the *Diplopoda* to herbaceous plants, THEOBALD (56 & 57), THOMAS (58).

Myrmecophily of *Blaniulus*, DONISTHORPE (21).

Venom of *Myriopoda*, COUPIN (20).

Parasites of *Diplopoda*, *Protozoa*, Gregarines, LÉGER & DUBOSCQ (38) of *Scolopendra*, LÉGER & DUBOSCQ (37); parasites of *Myriopoda*, Gregarines, LÜHE (40).

5. *Miscellaneous.*

Generic and specific character in *Scutigera*, VERHOEFF (64).

Monstrosity in some segments of an *Himantarium gabrielis*, BRÖLEMANN (11).

Review of literature for 1904, GIESBRECHT & MAYER (26).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

Localities for *Scolopendridæ* in Paris Museum, KRAEPELIN (32).

(1) *Arctic and Antarctic.*

Scandinavia, Russia, Siberia, ATTEMS (2).

(2) *Europe and Mediterranean Islands.*

Russia, list, ATTEMS (2).

Scandinavia, list, ATTEMS (2).

Norway, *Chilopoda*, *Symphyla*, *Diplopoda*, ELLINGSEN (23).

England, enumeration of described species of *Myriopoda*, SINCLAIR (54); Cambridgeshire *Myriopoda*, SINCLAIR (54).

Roumelia, *Diplopoda* n. sp., ATTEMS (3).

- Bosnia, *Chilopoda* and *Diplopoda* var. and n. sp., ATTEMS (3).
 Moravia, cavern fauna, ABSOLON (1).
 Austria, *Diplopoda* n. sp., ATTEMS (3).
 Swiss Alps, distribution of some *Diplopoda*, CARL (15).
 Dalmatia, *Chilopoda* and *Diplopoda* n. sp., ATTEMS (3).
 Italy, Val d'Aosta, PAVESI (44), North Italy, *Diplopoda*, ATTEMS (3).
 Caucasus, *Chilopoda*, *Symphyla* and *Diplopoda* of the Pontus-littoral, LIGNAU (39).
 France, Garonne, *Julidæ* n. spp., RIBAUT (46), cavern *Diplopoda*, VIRÉ (66) & FLORENTIN (25).
 Monaco, list of the *Chilopoda* with description of n. sp., BRÖLEMANN (11).

(3) *Asia (Palæarctic).*

- Siberia, list, ATTEMS (2).
 Central Asia, list of described species and n. sp. of *Chilopoda* and *Diplopoda*, ATTEMS (4).
 China, *Scutigeridæ*, VERHOEFF (64).
 Japan, *Scutigeridæ*, VERHOEFF (64).

(4) *India and Further India.*

- Indo-China, Polydesmoidea, BRÖLEMANN (10).
 Ceylon, *Scutigeridæ*, VERHOEFF (64).

(5) *Malay Peninsula and Archipelago.*

- N. Guinea, *Scutigeridæ* n. sp., VERHOEFF (64).
 Java, *Scutigeridæ* n. sp., VERHOEFF (64).
 Bismarck Archipelago, *Scutigeridæ* n. sp., VERHOEFF (64).

(6) *Africa.*

- East-Africa, *Scutigeridæ* n. sp., VERHOEFF (64).
 Abyssinia, enumeration of the *Chilopoda* and *Diplopoda*, BRÖLEMANN (12).
 Eritrea, *Chilopoda* and *Diplopoda* n. sp., BRÖLEMANN (12).
 Kamerun, *Scutigeridæ* n. sp., VERHOEFF (64).

(7) *North America.*

- North-Western North America, *Chilopoda* and *Diplopoda*, n. spp., COOK (19).
 Washington, *Polyxenus* n. sp., KINCAID (31).
 California, N. Mexico, Austria, Ithaca, n. spp. of *Chilopoda*, CHAMBERLIN (17).

(8) *South and Central America and West Indies.*

- Ecuador, Enumeration of the *Chilopoda* and *Diplopoda* described until 1901, ORTONEDA (43).
 Guatemala, *Chilopoda* and *Diplopoda*, BRÖLEMANN (13).
 Haiti, *Scutigeridæ* n. sp., VERHOEFF (64).

(9) *Australasia.*

- Australia, *Scutigeridæ*, VERHOEFF (64).

(10) *Atlantic Islands.*

Bermudas, *Chilop.* and *Dipl.* cit. and 1 n. sp. *Chilop.*, CHAMBERLIN ().

(11) *Indian Ocean Islands.*

(Vacant.)

(12) *Pacific Ocean Islands.*

Sandwich Ids., *Myriopoda*, n. spp., SILVESTRI (49).

Marschal Ids., *Myriopoda*, SCHNEE (48).

B. GEOLOGICAL.

Lancashire Coal measures, 3 spp. mentioned, BOLTON, Tr. Manchester Geol. Soc. xxviii, p. 648.

IV. SYSTEMATIC INDEX†.

{See also ATTEMS (2), CARL (15), ELLINGSEN (23), FLORENTIN (25), HUTTON (30), KRAEPELIN (32), LAMPA (34), ORTONEDA (43), SINCLAIR (54).

CHILOPODA.

Analytical key to the orders of Chilopoda; COOK, Harriman Alaska Exp. viii, p. 71.

NOTOSTIGMATA.

Ordo SCUTIGEROMORPHA.

Schizotarsi (= *Scutigermorpha*), p. 71; COOK, Harriman Alaska Exp. viii.

Ballonema n. gen. (*Scutigeridae*), p. 257; VERHOEFF, SB. Ges. naturf. Berlin 1904.

B. gracilipes, N. Guinea (German), p. 261; VERHOEFF, t. c.

Ballonemini n. trib. (*Scutigeridae*), p. 257; VERHOEFF, t. c.

Parascutigera n. gen. (*Scutigeridae*), p. 257; VERHOEFF, t. c.

P. dahli, Bismark Arch. p. 263; VERHOEFF, t. c. n. sp.

Pselliophora n. gen. (*Scutigeridae*), p. 259; VERHOEFF, t. c.

P. annuligera, German East-Africa, p. 225, *pulchritarsis*, p. 229, Haiti; VERHOEFF, t. c. n. spp.

Pselliophorinae n. subfam. (*Scutigeridae*), p. 257; VERHOEFF, t. c.

Scutigera defin., p. 258; VERHOEFF, t. c.

S.; limbs and their armature, details of their structure and variation in various species; VERHOEFF, t. c. pp. 198-236.

S. aethiopica, Erythrea, p. 109, pl. i, fig. 1; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.

S. lincei, Guatemala, p. 189; BRÖLEMANN, Bull. Soc. zool. France xxix.

Scutigeridae, characters of systematic value, n. subfam. tribes, gen. and spp.; VERHOEFF, SB. Ges. naturf. Berlin 1904, pp. 245-285.

Scutigerides n. gen. (*Scutigeridae*); SILVESTRI, Redia i, p. 253.

† Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- S. transvalicus*, Transvaal, p. 253; SILVESTRI, t. c. **n. sp.**
Scutigerina **n. gen.** (*Scutigeridae*), p. 254; SILVESTRI, t. c.
S. weberi, Cape Colony, p. 254; SILVESTRI, t. c. **n. sp.**
Scutigerina **n. subfam.** (*Scutigeridae*), p. 256; VERHOEFF, SB. Ges. naturf. Berlin 1904.
Scutigerini **n. trib.** (*Scutigeridae*), p. 258; VERHOEFF, t. c.
Sphendononema **n. gen.** (*Scutigeridae*), p. 259; VERHOEFF, t. c.
S. camerunense, Kamerun, p. 281; VERHOEFF, t. c. **n. sp.**
Thereuonema **n. gen.** (*Scutigeridae*), pp. 258-268; VERHOEFF, t. c.
T. n. subgen. of *T.* for *T. tuberculata* and *maculata*, p. 275; VERHOEFF, t. c.
T. rubrolineata, Ceylon, p. 268, *maculata*, Adelaide (Australia), p. 269, *tuberculata*, China, Japan, p. 269; VERHOEFF, t. c.
T. amokiana, Eastjava, p. 272; VERHOEFF, t. c. **n. sp.**
Thereuopoda **n. subgen.** of *Thereuonema* for *rubrolineata*, *longicornis*, *clunifera*, *amokiana* **n. sp.**, p. 275; VERHOEFF, t. c.

PLEUROSTIGMATA.

Ordo LITHOBIOMORPHA.

- Henicops fulvicornis*, Erythrea, p. 112; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
Lamyetes fulvicornis var. *hawaiiensis*, Hawaii, p. 325, pl. xi, figg. 1 & 2; SILVESTRI, Fauna Hawaiiensis iii, **n. var.**
L. heterotarsus, Hawaii, p. 325, pl. xi, figg. 3 & 4; SILVESTRI, t. c. **n. sp.**
Lithobius cacodontus, Ara-bel, Sary-bel, p. 116, *jugorum*, Kubergentey-Pass etc. p. 117; ATTEMS, Zool. Jahrb. Syst. xx, **n. spp.**
L. centurio, Las Vegas, p. 651, *cockerelli*, New Mexico, p. 652, *fungiferopes*, Ithaca, p. 652, *euthus*, Austin, p. 652, *navigans*, Bermudas, p. 653; CHAMBERLIN, P. Ac. Philad. lvi, **n. spp.**
L. curtipes, pp. 86 & 127, pl. i, figg. 1 & 2, *crassipes*, p. 87, figg. 3 & 4, *elegans*, p. 89, pl. i, figg. 8 & 9, *anodus* (?), pp. 92 & 129, pl. i, figg. 10-12, *viriatius*, pp. 93 & 129, pl. i, figg. 13 & 14, *forficatus*, p. 95, pl. i, figg. 15 & 16, *Kaucasus*; LIGNAU, Zapiski Novoross. Obsch. xxv.
L. curtipes, subsp. *turkestanicus*, Turkestan; ATTEMS, Zool. Jahrb. Syst. xx, p. 119, pl. viii, fig. 2.
L. erythrocephalus, Monaco, p. 11, *nodulipes nicoensis*, n. var. Monaco, p. 12; BRÖLEMANN, Bull. Mus. Monaco No. 15.
L. forficatus, morphology of the brain, HALLER, Arch. mikr. Anat. lxx.
L. hawaiiensis, Kauai, p. 324; SILVESTRI, Fauna Hawaiiensis iii.
L. intrepidus, p. 4, *nigrifrons*, p. 5, *crassipes*, Norway, p. 6; ELLINGSEN, Forh. Selsk. Christian. 1903, No. 6.
L. magnus, p. 118, *magnus* var. *pleodonta* n. var. Przewalsk, p. 118; ATTEMS, Zool. Jahrb. Syst. xx.
L. pusillus key of the subspecies *pusillus*, *denticulatus*, *calcivagus*, p. 180; ATTEMS, Arch. Naturg. lxx.
L. pusillus, Erythrea, p. 111; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
L. pusillus n. subsp. *denticulata*, p. 179, Dalmatia; ATTEMS, Arch. Naturg. lxx.
L. stejnegeri, Bering and Cooper Islands, p. 71; COOK, Harriman Alaska Exp. xiii.
L. vehemens, pp. 88 & 128, pl. i, figg. 5-7, *liber*, pp. 88 & 129, *Kaucasus*; LIGNAU, Zapiski Novoross. Obsch. xxv, **n. spp.**
Paralamyetes asperulus, Constantia, p. 256, *weberi*, p. 256, Knysna, *andinus*, p. 257, Punta de Vacas, Las Cuevas (Argentina); SILVESTRI, Redia i, **n. spp.**

Ordo SCOLOPENDROMORPHA.

[See also KRAEPELIN (32).]

- Cryptops* (? *Bottegii*) Erythrea, p. 114; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
C. anomalans, pp. 97 & 130, *hortensis* (?), pp. 98 & 130, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
Otocryptops, p. 73; COOK, Harriman Alaska Exp. viii.
Otostigmus denticulatus, Guatemala, p. 189; BRÖLEMANN, Bull. Soc. zool. France xxix.
Rhysida paucidens, Erythrea, p. 113; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
Scolopendra cingulata, pp. 96 & 130, Caucasus; LIGNAU, Zapiski Novoross. Obshch. No. xxv.
S. morsitans, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.
S. valida, Erythrea, p. 112; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
S. subspinipes, pl. xlii, fig. 3; LANKESTER, Quart. J. Micr. Sci. xlvii.
Scolopocryptops sexspinosus, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.

Ordo GEOPHILOMORPHA.

- Escaryus*, analytical key to the species and def.; COOK, Harriman Alaska Exp. viii, p. 76.
E. emend.; ATTEMS, Zool. Jahrb. Syst. xx, p. 124.
E. retusidens Przewalsk, p. 121, pl. viii, figg. 4-6; ATTEMS, t. c. n. sp.
E. retusidens var. *oligopus* n. var., Aksu-Thal, p. 122; ATTEMS, t. c.
E. sibiricus, Wladiwostok, p. 122, pl. viii, fig. 3; ATTEMS, t. c.
Geophilidae, analytical key to the West American genera; COOK, Harriman Alaska Exp. viii, p. 74.
Geophiloidea, analytical key to the North-west American families of; COOK, t. c. p. 73.
Geophilus sp. nec *electricus*, luminescence; BROCKHAUSEN, pp. 163 & 164, Jahresber. Westfal. Ver. xxxi.
G. alaskanus, Alaska, p. 75; COOK, Harriman Alaska Exp. viii.
G. flavidus, p. 98, *ferrugineus*, p. 100, *caucasicus*, p. 101, pl. i, figg. 18-22, *longicornis* var. *austriaca*, p. 101, pl. i, fig. 27, Caucasus, LIGNAU, Zapiski Novoross. Obshch. xxv.
G. flavidus setosus, pp. 99 & 130, pl. i, fig. 17, *flavidus vestitus*, pp. 99 & 131, pl. i, fig. 25, Caucasus, LIGNAU, t. c. n. var.
G. linearis, constitution of the centrosome and of the achromatic figure of the cytodiaeresis in male germinal cells, pp. lxxiii-lxxxviii, figg. 1-6; BOUIN, Arch. Zool. exp. (4) ii.
G. mediterraneus, Monaco, p. 9; BRÖLEMANN, Bull. Mus. Monaco No. 15.
G. regnans, S. California, p. 654, *cayuga*, Ithaca, p. 655; CHAMBERLIN, P. Ac. Philad. lvi.
G. richardi, Monaco, p. 9; BRÖLEMANN, Bull. Mus. Monaco No. 15, n. sp.
Himantarium tenuipose, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.
Lamnonyx spissus, p. 326, pl. xi, figg. 5-7; SILVESTRI, Fauna Hawaiiensis iii.
Linotenidae, p. 73; COOK, Harriman Alaska Exp. viii.
Linotenia rubelliana, California, p. 656; CHAMBERLIN, P. Ac. Philad. lvi, n. sp.
Mecistocephalus, p. 74; COOK, Harriman Alaska Exp. viii.
M. anomalus, California, p. 655; CHAMBERLIN, P. Ac. Philad. lvi.
M. attenuatus, North-western North America, p. 74; COOK, Harriman Alaska Exp. viii.

- M. edentulus* Przewalsk, p. 119, pl. viii, figg. 7-12; ATTEMS, Zool. Jahrb. Syst. xx, n. sp.
- M. punctifrons*, Erythrea, p. 118; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
- Mesocanthus albus minutus*, Erythrea, p. 116; BRÖLEMANN, t. c.
- M. porosus*, Turkestan, p. 118; BRÖLEMANN, t. c.
- Orphnæus brevilabiatus*, Erythrea, p. 115; BRÖLEMANN, t. c.
- Pectiniunguis*, key of the species; CHAMBERLIN, P. Ac. Philad. lvi.
- P. monterens*, California, p. 653; CHAMBERLIN, t. c.
- Schendyla mediterranea* n. subsp. *dalmatica*, Dalmatia, p. 180, pl. ix, figg. 2 & 3; ATTEMS, Arch. Naturg. lxx.
- S. montana monoeci* n. var., Monaco, p. 7; BRÖLEMANN, Bull. Mus. Monaco No. 15.
- S. nemorensis*, p. 5, fig. 1, *nemorensis* subsp. *mediterranea*, p. 6, figg. 5 & 6, *nemorensis mediterranea* var. *vizzavonæ*, p. 6, figg. 2 & 3, Monaco, *nemorensis* var. *carniolensis*, Carniola, p. 6, fig. 4; BRÖLEMANN, t. c.
- Schendylidæ*, analytical key to the North American genera; Cook, Harriman Alaska Exp. viii, p. 76.
- Scolioplanes acuminatus* var. *microdon* n. var., Bosnia, p. 181, pl. ix, fig. 1; ATTEMS, Arch. Naturg. lxx.
- S. crassipes*, p. 101, *acuminatus*, p. 102, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
- Scotophilus illyricus*, Caucasus, p. 102; LIGNAU, t. c.
- Stigmatogaster arcis-herculis*, Monaco, p. 3; BRÖLEMANN, Bull. Mus. Monaco No. 15, n. sp.
- Stylolæmus*, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.
- Tomotenia chionophila*, North-western North America, p. 73; Cook, Harriman Alaska Exp. viii.

SYMPHYLA.

- Scolopendrella notacantha*, p. 103, *nivea*, p. 103, *immaculata*, p. 103, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
- Scutigereilla immaculata*, habitat; WILLIAMS, Science xix, p. 210.

PAUROPODA.

(Vacant.)

DIPLOPODA.

Analytical key to the subclass of Diplopoda; Cook, Harriman Alaska Exp. viii, p. 50.

COLOBOGNATHA.

Colobognatha def.; Cook, Harriman Alaska Exp. viii, p. 62.

Ordo POLYZONOIDEA.

Polyzoniidæ, analytical key to the genera of *Polyzoniidæ*; Cook, Harriman Alaska Exp. viii, p. 62.

Hypozoneum n. gen. (*Polyzoniidæ*), p. 62; Cook, t. c.

H. anurum, Washington, p. 63, pl. v, figg. 1a-1d; Cook, t. c. n. sp.

CHILOGNATHA.

Analytical key to the West American orders of *Chilognatha*; COOK, Harriman Alaska Exp. viii, p. 51.

Ordo PSELAPHOGNATHA.

- Polyxenus hawaiiensis*, Ohau, p. 327, pl. xi, figg. 8-13; SILVESTRI, Fauna Hawaiiensis iii, **n. sp.**
P. ponticus, Caucasus, pp. 104 & 131; LIGNAU, Zapiski Novoross. Obshch. xxv, **n. sp.**
P. pugetensis, Alaska and State of Washington, p. 192; KINCAID, Ent. News Philad. iv (1898), **n. sp.**

Ordo LIMACOMORPHA.

(Vacant.)

Ordo ONISCOMORPHA.

- Doderidæ* **n. fam.** p. 61; SILVESTRI, Ann. Mus. Genova (3) i.
Doderia **n. gen.** p. 62; SILVESTRI, t. c.
D. genuensis, Genova, p. 63; SILVESTRI, t. c.
Gervaisia costata var. *genuina* = (*Trachysphæra schmidtii* Hell. = *hyrtlîi* Wankel); ABSOLON, p. 63, Vestnik. Klub. Prostejove ii.
Glomeris marginata, habitat, coupling, ovoposition, eggs, development, moults, enemies, pp. 251-256; HENNINGS, Biol. Centrbl. xxiv.
G. piccola, Caucasus, pp. 104-131, pl. i, figg. 23-25; LIGNAU, Zapiski Novoross. Obshch. xxv.

Ordo CÆLOCHETA.

Sub-ordo CHORDEUMOIDEA.

- Chordeuma silvestre* (?), Caucasus, pp. 107 & 132; LIGNAU, Zapiski Novoross. Obshch. xxv.
Craspedosoma sp.?, Caucasus, pp. 107 & 132; LIGNAU, t. c.
Fagina **n. subg.** of *Heterolatzelia*; ATTEMS, Arch. Naturg. lxx, p. 182.
Heterolatzelia (Fagina) silvatica, Bosnia, p. 182, pl. ix, figg. 6-12; ATTEMS, t. c. **n. sp.**
Tianella **n. gen.** (*Chordeumidæ*); ATTEMS, Zool. Jahrb. Syst. xx, p. 126.
T. fastigata, Przewalsk, p. 127, pls. ix, xix-xxvi; ATTEMS, t. c. **n. sp.**

Ordo MONOCHETA (STEMMATOJULOIDEA).

(Vacant.)

Ordo MEROCHETA (POLYDESMOIDEA).

Analytical key to West American families of *Merocheta*; COOK, Harriman Alaska Exp. viii, p. 52.

- Aporodesmus* **n. gen.** (*Cryptodesmidae*), p. 327; SILVESTRI, Fauna Hawaiiensis iii.
A. wallacei, Hawaii, p. 328, pl. xi, figg. 14-17; SILVESTRI, t. c. **n. sp.**
Chelodesmidae, analytical key to the West American genera; COOK, Harriman Alaska Exp. viii, p. 55.

Chonaphe n. gen. (*Chelodesmidæ*), p. 56; COOK, t. c.

C. armata, Oregon, Washington, Idaho, p. 56, pl. iv, figg. 2a-2c, *eruca* Oregon, Washington, p. 57; COOK, t. c.

Fontaria indianæ, breeding habits; MORSE, Ohio Natural. iv, pp. 161-163.

Harpaphe n. gen. (*Chelodesmidæ*), p. 59; COOK, Harriman Alaska Exp. viii.

H. haydeniana, Oregon, p. 59, pl. iv, figg. 4a-4c, *intaminata*, California, p. 60, COOK, t. c.

Holitys; COOK, t. c. p. 26.

Hybaphe n. gen. (*Chelodesmidæ*), p. 58; COOK, t. c.

H. curtipes, State of Washington, p. 59; COOK, t. c. n. sp.

Isaphe n. gen. (*Chelodesmidæ*), p. 57; COOK, t. c.

I. convexa, Idaho, p. 58, pl. iv, figg. 1a & 1b; COOK, t. c. n. sp.

Melaphe, n. name for *Oxyurus* C. Koch; COOK, t. c. p. 55.

Orthomorpha festiva, Siam, p. 4, pl. xiii, fig. 1, pl. xiv, figg. 4-8, and xv, figg. 24-27, *O. sp.* Cambodge, p. 6, pl. xiv, figg. 9-13, *pariei*, p. 8, pl. xiii, fig. 3, xiv, figg. 14-17, xv, figg. 28-32, *O. variegata*, Siam, p. 10, pl. xiii, fig. 3, xiv, figg. 18-22, xv, fig. 23, BRÖLEMANN, Mission Pavie iii.

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P. complanatus intermedius n. subsp., Franzenshöhe, p. 181, pl. ix, figg. 4 & 5; ATTEMS, t. c.

P. strongylosomoides, p. 125, pl. ix, figg. 16 & 17, *almassyi*, p. 125, pl. ix, figg. 13-15, *stummeri*, Przewalsk, p. 126, pl. ix, fig. 18; ATTEMS, Zool. Jahrb. Syst. xx, n. spp.

Platyrhacus bouvieri, Siam, p. 2, pl. xv, figg. 33-36; BRÖLEMANN, Mission Pavie iii.

P. nitidus, Guatemala, p. 190; BRÖLEMANN, Bull. Soc. zool. France xxix.

Scytonotus, p. 61; COOK, Harriman Alaska Exp. viii.

Strongylosoma andreinii, Erythrea, p. 123, pl. i, figg. 5-7; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv, n. sp.

S. andreinii subsp. *Dongolliana*, Erythrea, p. 126, pl. i, figg. 8-10; BRÖLEMANN, t. c. n. subsp.

S. kordylamythrurum, Caucasus, pp. 106 & 132, pl. i, fig. 28, pl. ii, figg. 29-34; LIGNAU, Zapiski Novoross. Obshch. xxv.

S. magretti ugrianum, Erythrea, p. 120; BRÖLEMANN, pl. i, figg. 3 & 4, Bull. Soc. ent. Ital. xxxv, n. var.

Xystodesmidæ def.; COOK, Harriman Alaska Exp. viii, p. 52.

Xystocheir n. gen. (*Xystodesmidæ*), p. 53; COOK, t. c.

X. furcifer, California, p. 54, *dissuta*, California, p. 55; COOK, t. c.

X. obtusa, California, p. 53, pl. iii, figg. 1a-1c, *acuta*, California, p. 54; COOK, t. c. n. spp.

Ordo ZYGCHETA (JULOIDEA, s. s.).

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Novoross. Obshch. xxv.

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- B. (Chromatoiulus) lictor*, Eastromelia, p. 184, pl. ix, figg. 13–16; ATTEMS, Arch. Naturg. lxx, **n. sp.**
- B. (Microbrachyiulus) varibolius*, Variboli, p. 185, pl. ix, figg. 21 & 22; ATTEMS, t. c. **n. sp.**
- Cylindroiulus brolemanni* Franzenshöhe & Noctitalg, p. 191, pl. x, figg. 56–58, *pollicaris*, Lübek, p. 194, pl. x, figg. 53–55; ATTEMS, t. c.
- C. zinalensis* Rothenb. n. subsp. *arulensis*, p. 193, pl. x, figg. 50–52; ATTEMS, t. c.
- Diplopoiulus luscus*, Hawaii, p. 338, Fauna Hawaiensis iii.
- Femoriferus n. subg.* of *Julus*; ATTEMS, Arch. Naturg. lxx, p. 189.
- Hylopachyiulus n. subg.* of *Pachyiulus*; ATTEMS, t. c. p. 183.
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- Julus bellus*, pp. 107 & 132, pl. ii, figg. 35–39, *placidus*, pp. 108–123, pl. ii, figg. 40–43, *ruber*, pp. 109–134, pl. ii, figg. 44–48, *curvicaudatus*, pp. 110 & 135, pl. ii, figg. 49–53, *litoreus*, pp. 112 & 137, pl. ii, fig. 54, pl. iii, figg. 55–58, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
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- J. (Leptoiulus) vagabundus*, Croazia-Tirol, p. 186, *deubeli* n. subsp. *korongisius*, Siebenbürgen, p. 186, pl. ix, figg. 17, 18, 20, *montivagus*, Baden, p. 187, pl. ix, figg. 31–33, *montivagus* var. *elucens*, Tirol, p. 188, pl. x, figg. 34 & 35, *oribates*, Tirol, Austria, p. 188, pl. x, figg. 47–49; ATTEMS, t. c.
- J. (Leptoiulus) garumnicus*, Garonne, p. 2, 4 figg.; RIBAUT, Bull. Soc. hist. nat. Toulouse 1904, **n. sp.**
- J. (Leucoiulus) spinosus*, Garonne, p. 9, 4 figg.; RIBAUT, t. c. **n. sp.**
- J. (Microiulus) rebeli*, Eastromelia, p. 190, pl. x, figg. 36–40; ATTEMS, Arch. Naturg. lxx, **n. sp.**
- J. (Pachyiulus) flavipes* (?), Caucasus, pp. 113–139, pl. iii, figg. 65–71; LIGNAU, Zapiski Novoross. Obshch. xxv.
- Pachyiulus (Hylopachyiulus) pygmaeus*, Bosnia, p. 183, pl. ix, figg. 23 & 24; ATTEMS, Arch. Naturg. lxx, **n. sp.**
- Parajulidæ* def.; COOK, Harriman Alaska Exp. viii, p. 70.
- Parajulus alaskanus*, Alaska, p. 70, pl. v, figg. 4a–4h; COOK, t. c.
- P. furcifer*, Oregon, p. 70, pl. v, figg. 5a–5e; COOK, t. c.
- Schizophyllum n. var.*; VERHOEFF in Wolterstorff.

Ordo DIPLOCHÆTA.

Sub-ordo CAMBALOIDEA.

- Cambalidæ*; SILVESTRI, Fauna Hawaiensis ii.
- Dimergonius aveburyi*, Maui, Haleakala, p. 330, pl. xi, figg. 19–21, *sharpi*, Maui, Haleakala, p. 330, pl. xi, figg. 22–27, *sharpi* var. p. 331,

Oahu, *shipleyi*, Maui, Haleakala, p. 332, pl. xi, fig. 28, *carpenteri*, Lanai, p. 332, pl. xi, figg. 29 & 30, *beddardi*, Maui, Haleakala, p. 333, pl. xi, figg. 31-33, *pococki*, Molokai Mts., p. 334, pl. xii, figg. 36-40, *sedgwicki*, Oahu, Waianae Mts., p. 334, pl. xii, figg. 41-46, *sinclairi*, Maui, Haleakala, p. 335, figg. 42-51, *lankesteri*, Kauai, Halemann, p. 336, pl. xii, fig. 52, *harmeri*, Molokai, p. 336, pl. xii, figg. 53-56, *perkinsi*, Maui, Haleakala, p. 337, pl. xii, figg. 57-62, *koebeleri*, Maui, Haleakala, p. 338, pl. xii, figg. 63-65; SILVESTRI, t. c. **n. spp.**

Sub-ordo SPIROSTREPTOIDEA.

Archispirostreptus pyrocephalus, pl. xlii, figg. 1 & 2; LANKESTER, Quart. J. Micr. Sci. xlvii.

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O. severini, p. 132, pl. i, figg. 11 & 12, *vannutelli*, p. 137, pl. i, figg. 13 & 14, and pl. ii, fig. 15, *Odontopyge* sp., Erythrea; BRÖLEMANN, t. c.

Spirostreptus lugubris, Erythrea, p. 150, BRÖLEMANN, t. c.

S. (Scaphiostreptus) rodriguezi, Guatemala, p. 120, BRÖLEMANN, Bull. Soc. zool. France xxix.

Ordo ANOCHETA (SPIROBOLOIDEA).

Anocheta, def.; COOK, Harriman Alaska Exp. viii, p. 63.

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Onychelus **n. gen.** (*Spirobolidae*), p. 67; COOK, Harriman Alaska Exp. viii.

O. obustus, Colorado, p. 68, COOK, t. c. **n. sp.**

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R. (?), sp. Guatemala, p. 190, BRÖLEMANN, Bull. Soc. zool. France xxix.

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Spirobolus, def.; BRÖLEMANN, t. c. figg. 1 & 2.

S. marginatus, copulatory append.; BRÖLEMANN, t. c.

Trigoniulus, def.; BRÖLEMANN, t. c. figg. 7 & 8.

T. allaudi, copulatory append.; BRÖLEMANN, t. c. fig. 7.

T. Naresi, copulatory append.; BRÖLEMANN, t. c. fig. 8.

Tylobolus **n. gen.** (*Spirobolidae*), p. 65; COOK, Harriman Alaska Exp. viii.

Tylobolus deses, California, p. 65, pl. iii, figg. 3a-3h; COOK, t. c. **n. sp.**

T. hebes, California, p. 66, *uncigerus*, p. 67; COOK, t. c.

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II. BIOLOGY.

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XIII. INSECTA.

By D. SHARP.

CONTENTS.

	Page		Page
INTRODUCTION	3	BIOLOGY— <i>continued</i> .	
I. TITLES	6	3. Palæarctic region (a.	
II. BIOLOGY: SUBJECT-INDEX.		collective)	98
Anatomy and Physiology	82	b. Europe (collective)	99
Ethology	85	c. British Islands	99
Development	88	d. North Europe,	
General Subjects:—		Siberia	104
Variation & Teratology	89	e. Centr. & East.	
Hybrids	90	Europe	104
Colour	90	f. France	106
Protection	90	g. South. Europe and	
Resemblance	91	Mediterranean	108
Phylogeny, Evolution,		h. Caucasus & West	
Heredity	91	& Central Asia	110
Galls	91	4. Africa	110
Insects & Flowers & Plants	92	5. Madagascar, etc.	113
Collections, Preservation,		6. Tropical & East. Asia	113
Museums, Nomenclature	92	7. Asiatic Archipelago	115
Bibliography	92	8. Australia & Tasmania	117
Biography	93	9. North America	118
Obituary Notices	93	10. Central America	121
Economic Entomology	94	11. Antilles	122
Faunistic:—		12. South America	122
General	97	Palæo-entomology	124
1. Arctic & Antarctic	97	III. SYSTEMATIC INDEX.	126
2. Insular, incl. N. Zealand	97		

(a) COLEOPTERA (incl. STREPSIPTERA).

	Page		Page		Page
General	127	Mycetophagidæ	148	Cistelidæ	169
Cicindelidæ	127	Thorictidæ	148	Melandryidæ	169
Carabidæ	128	Dermostidæ	148	Lagriidæ	169
Halipidæ	132	Byrrhidæ	148	Anthicidæ, Pedi-	
Dytiscidæ	132	Parnidæ and		lidæ	169
Gyrinidæ	133	Heteroceridæ	148	Rhipiphoridæ	170
Hydrophilidæ	133	Lucanidæ	149	Stylopidæ	170
Staphylinidæ	133	Passalidæ	149	Mordellidæ	170
Pselaphidæ	139	Scarabæidæ	150	Cantharidæ	170
Paussidæ	144	Buprestidæ	158	Ægialitidæ, Pyro-	
Scydmanidæ	144	Throscidæ (vacant)		chroidæ, Pythi-	
Silphidæ	144	Eucnemidæ	160	dæ, Edemeridæ	171
Trichopterygidæ	145	Elateridæ	160	Curculionidæ	171
Scaphidiidæ	145	Rhipiceridæ and		Scolytidæ	182
Histeridæ	145	Dascillidæ	162	Brenthidæ	183
Phalacridæ (vacant)		Malacodermidæ	162	Anthribidæ	183
Nitidulidæ	146	Cleridæ	163	Cerambycidæ	185
Monotomidæ (vacant)		Lymexylonidæ &		Bruchidæ	189
Trogositidæ (vacant)		Cupesidæ (vacant)		Chrysomelidæ	190
Colydiidæ	146	Ptinidæ	164	Erotylidæ	198
Rhysodidæ	147	Bostrychidæ	164	Endomychidæ	198
Cucujidæ	147	Cioidæ	165	Coccinellidæ	198
Cryptophagidæ	147	Tenebrionidæ	165	Proterrhinidæ	198
Lathridiidæ	147				

(b) HYMENOPTERA.

	Page		Page		Page
General	199	Hymenoptera		Proctotrypidæ and	
Aculeata—		parasitica	218	Pelecinidæ	233
Apidæ	199	Ichneumonidæ	218	Cynipidæ	235
Masaridæ, Ves-		Braconidæ	223	Sessiliventes—	
pidæ, etc.	207	Evaniidæ	225	Cephidæ, Siri-	
Fossoria	209	Trigonalidæ (va-		cidæ & Orys-	
Formicidæ	214	cant), Stepha-		sidæ	236
Chrysidæ	217	nidæ	226	Tenthredinidæ	236
		Chalcididæ	226		

(c) LEPIDOPTERA.

General	238	Rhopalocera—		Heterocera—	
Rhopalocera—		Satyridæ	246	Noctuidæ, etc.	265
General	238	Erycinidæ,		Geometridæ,	
Papilionidæ	239	Libytheidæ	247	Epiplemidæ,	
Pieridæ	240	Lycænidæ	248	Uraniidæ	271
Danaidæ and		Hesperiidæ	251	Pyralidæ, Thy-	
Ithomiidæ	241	Heterocera—		rididæ	286
Acraeidæ, Heli-		Castniidæ (vacant)		Pterophoridæ	291
coniidæ	242	Sphingidæ	252	Tortricidæ	291
Nymphalidæ	242	Sesiidæ	253	Tineidæ	292
Brassolidæ,		Bombyces, etc.	254		
Morphidæ, etc.	245				

(d) DIPTERA.

General	297	Stratiomyidæ,		Syrphidæ	306
Cecidomyiidæ	297	Scenopinidæ	303	Conopidæ	307
Mycetophilidæ	297	Tabanidæ	303	Phoridæ, Termi-	
Chironomidæ	298	Leptidæ and The-		toxiidæ	307
Culicidæ	298	revidæ	304	Æstridæ	308
Simuliidæ, Bibio-		Asilidæ, Mydaidæ	304	Muscidæ calyp-	
nidæ, Psycho-		Bombyliidæ	305	tratæ	308
didæ	302	Acroceridæ	305	Muscidæ acalyp-	
Dixidæ, Blepharo-		Empidæ	305	tratæ	310
ceridæ (vacant)		Dolichopidæ	306	Pupipara	312
Tipulidæ	302	Platypezidæ and		Aphaniptera	313
		Pipunculidæ	306		

(e) HEMIPTERA OR RHYNCHOTA.

General	315	Hem.-Heteroptera—		Hem.-Homoptera—	
Hemiptera-Hetero-		Hydrometridæ,		Fulgoridæ	332
ptera—		Hebridæ	321	Flatides	334
Pentatomidæ	315	Reduviidæ etc.	322	Membracidæ	335
Coreidæ	319	Anthocoridæ, etc.	324	Cercopidæ	335
Lygæidæ and		Polyctenidæ	324	Jassidæ	336
Pyrrhocoridæ	320	Capsidæ	324	Psyllidæ	336
Tingidæ	321	Saldidæ	329	Aphidæ	337
Berytidæ (vacant)		Hydrocorisæ	329	Aleurodidæ	338
Aradidæ	321	Hem.-Homoptera—		Coccidæ	338
Phymatidæ	321	Cicadidæ	330	Anoplura	339

(f) NEUROPTERA s. l. (incl. THYSANOPTERA).

Trichoptera	341	Termitidæ	345	Ephemèridæ	347
Planipennia	342	Embiidæ	346	Odonata	347
Psocidæ	344	Perlidæ	346	Thysanoptera	349
Mallophaga	344				

(g) APTERA.

Thysanura	350	Collembola	350
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(h) ORTHOPTERA.

Forficulidæ	352	Mantidæ	355	Locustidæ	357
Hemimeridæ	353	Phasmidæ	355	Acrididæ	358
Blattidæ	353	Gryllidæ	357		

INTRODUCTION.

THE Record of Insecta is not quite so extensive as that of last year, the number of titles being 1549 against 1716 for 1903. We have numerous important works to record.

HENNEGUY's general work, "Les Insectes," is up to date and on most points thoroughly reliable; it gives in a concise form the sort of information by the accumulation of which the progress of entomology is greatly affected; and is invaluable as a compendium of subjects that are often but little known to entomologists. A correction of an error in it as regards the question of coloration will be found in Bull. Soc. ent. France 1905, p. 146.

The subject of the Orders of Insects and their classification has been again discussed by HANDLIRSCH (657), HEYMONS (684); other papers on this point are given by BÖRNER (157) and KLAPÁLEK (815). Though there is a general consent that the Orders are more numerous than was formerly considered to be the case, the views of the authorities in other respects are very diverse.

SHIPLEY (1291) has proposed that the names of all Orders shall have an uniform termination, and if this result can be attained it will be very valuable. HANDLIRSCH has no less than twelve different terminations in the names of his 34 Orders. If Entomology is to be taught in schools of Zoology it is high time for the question of an uniform terminology for the complex taxonomy of Insecta to be discussed, and our thanks are due to Mr Shipley for his practical method of introducing the point.

DONCASTER (402) gives a preliminary paper on the parthenogenetic development of *Nematus*. Though the subject is of great interest, and will probably enlighten us as to the nature of the earliest processes of ontogeny, yet at present the information is too incomplete to warrant any conclusions.

MARCHAL (906) has given more fully the results of his work on germi-nogony—a term he wishes to replace that of embryonic dissociation. In this he is doubtless correct for the division takes place in the nuclei before the formation of a definite embryo. The work is of a most interesting and important nature.

Miss EMBLETON's memoir (450) on the anatomy and development of a Chalcid parasite of a scale-insect makes us acquainted with parts of a life-history of a remarkable character. Her accounts of the oogenesis and respiratory changes are particularly interesting, though only fragmentary.

The question of the number of segments from which the head is developed is discussed by RILEY (1173), who concludes that "sclerites originate from mechanical causes and do not necessarily have any relation to the primary segmentation." He admits six segments for the head. The same number is favoured by HOLMGREN (699), but it must be admitted that this conclusion is still hypothetical rather than demonstrated.

HILZHEIMER (686) gives a dissertation on the morphology of the labium and on the anatomy of the hypopharynx in *Hymenoptera*. DICKEL (379) resumes the question as to the nature of entoderm, taking the egg of the bee as his object; and SCHWANGART studies the same question in *Lepidoptera* (1259). VOSS (1461) contributes the first part of a study of the thorax of *Gryllus*, dealing with the skeleton; subsequent parts are to include the development of the wings, a subject that, as he justly remarks, has been greatly neglected in the lower Insects.

VERHOEFF (1435) discusses the morphology of leg and of hypopharynx ; and in a postscript announces that morphologists have hitherto been in error as to the maxillæ of Insects ; the labium being really the anterior, not the posterior, of the pairs of maxillæ. The same author gives an anatomical study (1434) of *Embiidæ*, treating them as a suborder of *Isoptera* ; and he also amplifies his views as to the structure of the thorax in *Hexapoda*. SCHAUDINN (1224) in his work on the life-history of a parasitic Protozoon, gives an account of the alimentary system and of the mode of feeding of *Culex pipiens*. He inclines to the opinion that the poisonous effect of its bite is due to the enzyme of a commensal fungus. VIGIER (1456) informs us that he has discovered an apparatus of accommodation in the eye of *Aeschna* for seeing at different distances.

RÖSSIG (1189) gives an interesting paper on the formation of galls of *Cynipidæ*, in the course of which he discusses the function of cœnocytes. HOUARD (719) contributes an extensive paper on the structure of galls ; although predominantly botanical it treats of the determinants and is of considerable importance.

Some works on development have already been mentioned, but there are numerous others. The study of cuticula and ecdysis is now being pursued, and we have from PLOTNIKOW (1089) a valuable paper connected with the histology of the subject. ANGLAS (32) makes an important suggestion as to the relation of tracheæ to metamorphosis. BAUER (93) enlarges on the extreme changes that take place post-embryonically in the central nervous system.

DEGENER (358) discusses the changes that take place in the mesenteric region, showing that there is a special pupal epithelium, acting functionally for the digestion or partial digestion of the "yellow-body." POWELL (1104) gives information as to the formation of wings of *Coleoptera* etc. ; maintaining that wings are outgrowths of the pleuron or tergum, or both ; a conclusion which seems at present the only one consistent with all the evidence that has been obtained. KELLOGG has experimented on larvæ of *Lepidoptera* and confirms the previous observation of Oudemans that extirpation of the sex glands does not affect the development of the secondary sexual characters (781). In metamorphosis see also papers by DEWITZ (377, 378) on the physiology thereof, including coloration and chitinisation, in which he is inclined to extend the importance of enzyme action.

ASHMEAD has nearly or quite completed his classification of the *Hymenoptera* by a huge contribution (41) on the important group *Chalcidoidea*, which he considers includes 14 families. RAFFRAY has published a general work on the *Pselaphidæ* (1114), a family he has made of the first importance. It is a matter for regret that he has been obliged to defer the execution of a monograph for the present. DE MEIJERE's paper on *Conopidæ* (933) makes a large addition to our previously meagre knowledge of the biology of this curious family of parasitic *Diptera*. BAKER (76) has given a catalogue of fleas complete to date, with information as to works and localities, and has revised the American forms.

Amongst the remarkable events of the year must be placed the discovery in France of a new genus of blind *Dytiscidæ* in a deep well fed by a subterranean spring, ABEILLE (3). This gives considerable support to the idea that Cave faunas have their origin in a hypogeal fauna of which we know little or nothing. An anomalous insect from the nest of a Termite has been described by BREDDIN & BÖRNER (173) and assigned to *Rhynchota* on somewhat unsatisfactory grounds.

Among faunistic work we find the largest contribution in MEYRICK's Australian *Gelechiidæ* with 207 new species. He estimates the Australian Tineidæ at about 2,000 species—more probably an underestimate rather than the reverse. The publication in complete form of the results of the Harriman Alaska expedition is very welcome. The insects make two nice

volumes: MERRIAM (940). HUTTON's list of the fauna of New Zealand is a work for which we owe our thanks to the author and his collaborators (726): the Insects occupy about 150 pp. JAMES & LISTON *Anopheles* of India is remarkable for the figures of mosquitoes it contains (760). The third part of E. E. GREEN's beautiful work on the *Coccidæ* of Ceylon (620) is devoted entirely to the genus *Lecanium*. The fourth volume of GANGLBAUER's valuable work on European Coleoptera includes a statement of his views as to the classification of this Order (580).

BRÈTHES (181) records some valuable experiments as to the habits of Aculeate *Hymenoptera*; they tend to support Fabre's views as to the skill displayed in stinging the prey. ADLERZ has given a short account of the habits of *Methoca ichneumonoides*, which appear to be of the most extraordinary and unexpected nature (16).

The fact that has given rise to much surprise of the use of larvae by ants for the formation of their nests has now been confirmed by its discovery on the other side of the world, the Messrs Göldi having observed that *Camponotus senex* constructs its nests in this fashion in S. America: FOREL (532). The information given by JACOBSON & WASSILJEV (741) adds to our knowledge of the habits of *Termitidæ*, the founding of a nest of *Hodotermes* having been witnessed and described by JACOBSON. Miss FIELDE & Miss PARKER have given an account (508) of a series of instructive experiments as to the sense of hearing in ants. Perhaps the most interesting of Miss Fielde's papers on ants is that on their power of recognition (506). Mr DWIGHT PIERCE has an interesting ethological article on hypermetamorphic beetles and their hosts, with special reference to the very curious *Myiodites* (1086). SCHWARZ (1260) tells us of a grass that catches insects in great quantities in Cuba. M. PERRAUD (1031, 1032) as the result of experiments is able to state the conditions that should be realised to attract *Lepidoptera* to light.

PACKARD (1006), whose decease will be generally regretted, gives an account of the origin of pattern from the Lamarckian stand-point, and accompanies it with a very sensible criticism of the fashionable theories of mimicry. KUSNEZOV has published an article (849) calling attention to the undeveloped state of the study of the markings of Lepidopterous larvae. ENTZ has a long discussion on mimicry, but unfortunately, as it is in Hungarian few of us can profit by it (466). PIEPERS, who discusses the "tails" of Lepidopterous wings, apparently considers them as relicts from wings of larger size.

In the economic department Prof. J. B. SMITH's work (1315) on mosquito control is the most important production. DYÉ gives (444) a short and easily intelligible account of the relations of *Culicidæ* and their disease-dealing parasites.

Those who are interested in the—perhaps too extensive—chamber of horrors of entomology must not miss the New Congo floor maggot, DUTTON, TODD & CHRISTY (418).

The Polymorphism of ants is discussed by FOREL (525) & EMERY (452); the former of whom expresses a little doubt as to its causation. KELLOGG & BELL contribute a study of variation in 24 species of various Orders, and a discussion of general conclusions (783).

The naming of varieties is at present carried to a great extent, and we have not space to record them all, but we endeavour to point out all that appear to be of real importance. It may perhaps not be superfluous to add that the study of variation is by no means dependent for advancement on the naming of varieties.

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II. BIOLOGY.

SUBJECT-INDEX.

1. ANATOMY AND PHYSIOLOGY.

N.B. The arrangement in the subsections is of little importance, as each of them is not complete in itself.

Modern biology, much entomological matter, WASMANN (1480).

The morphology, embryology and sexual life of Insects, HENNEGUY (676).

a. Morphology. (See also **b.**)

Legs, maxillæ, hypopharynx, VERHOEFF (1435).

Morphology of the leg, BÖRNER (158).

Morphology of leg, abstract of Verhoeff's views, VERHOEFF, Zool. Zentrbl. 1904, p. 658.

Corpora allata, nerve-centres and metameres, *Chironomus* larva, HOLMGREN (699).

Morphology of head, HOLMGREN (699).

Endoderm, vitellus, mesenteron, MARCHAL (908).

Endoderm, origin of, bee, DICKELE (379).

Endoderm study, SCHWANGART (1259).

The segmentation of the primitive Insect, anatomy of thorax, six segments, new names, anatomy of *Embiide*, VERHOEFF (1434).

b. General (comprehensive) and External. (See also the other subsections for special systems or organs.)

Structure of the chitin skeleton *Coleoptera*, VON LINDEN (883).

Head of *Blatta*, morphology, RILEY (1173).

Morphology of head of *Dipterous* larvæ and T-shaped ridges of œsophagus of *Musca*, HOLMGREN (700).

Morphology of head and mouth-parts, *Rhynchop. Coleopt.*, MCCLENAHAN (930).

Thorax of *Gryllus*, skeleton, VOSS (1461).

Compound structure of maxilla and of thorax, BANKS (86).

Mouth-parts, *Mallophaga*, WATERHOUSE, p. v, P. ent. Soc. London 1904.

Trophi of *Diptera*, WESCHÉ (1513, 1514).

Mouth-parts of flies, WIMMER (1534).

Hypopharynx of *Machilis*, etc., maxillula, BÖRNER (157).

Mouth-parts, *Trichoptera*, ULMER (1417).

Labrum and hypopharynx, *Hymenoptera*, HILZHEIMER (686).

Labrum, adult and young, *Odonata*, BUTLER (211).

Mouth of *Anoplura*, ENDERLEIN (463).

Structure of proboscis *Anophelides*, LEON (875).

Ventral-tube, *Collembola*, HOFFMANN (694).

Internal anat. abdomen, *Aspidomorpha*, MUIR (969).

The abdomen of *Odonata*, and its appendages, larva and imago, HEYMONS (683); HANDLIRSCH (662).

Anatomy of honey-bee, HOMMEL (702).

Anatomy and development of a *Chalcid*, EMBLETON (450).

Anatomy of mosquito, LEBREDO (867).

Anatomy and morphology *Culex*, PAZOS Y CABALLERO (1012).

Anatomical points, *Culex macidus alternans*, COLLEDGE (297).

Epistomal appendages *Culicidæ* larvæ, KNAB (821).

Structure of *Conopidæ* and larvæ, DE MEIJÉRE (933).

Anatomy of *Ranatra*, MARSHALL & SEVERIN (917).

Diaspis pentagona, brief anatomical notes, MAZZARELLI (929).

Anatomy of *Campodea*, PHILIPTSCHENKO (1045).

Mechanics of wing movement, BULL (200).

Luminescent organs, *Photinus*, TOWNSEND (1392).

Scent-organ of *Phassus*, DEGENER (359).

Scent of *Rhopalocera*, LONGSTAFF, p. lxxxix, P. ent. Soc. London 1904.

c. Nervous System, Sense-Organs. (For Senses, Psychology etc., see p. 85.)

Morphology of central nervous system, HALLER (652).

Nerves, histology, *Periplaneta*, FLOYD (521).

Sense-organs in *Diptera*, WESCHÉ (1515).

Sense-organs, antenna of *Tryxalis*, RÖHLER (1185).

Sense-organ ?, *Æcetis*, RIS (1175).

Eye of bee, structure and development, PHILLIPS (1046A).

Eyes *Coleopt.* no. of facettes, LEINEMANN (872).

Ocelli, development in *Periplaneta* and *Cloëon*, REITZENSTEIN (1157).

Apparatus of accommodation, eye of *Æschna*, VIGIER (1456).

Static-organ, *Aphidæ*, STAUFFACHER (1335).

d. Muscular System.

Histology of muscle, *Coleoptera*, PRENANT (1107).

Histology of muscle, *Hydrophilus*, GRUVEL (643).

Mode of insertion of muscles on the skeleton, STAMM (1334).

e. Nutritive System and Glands (incl. Circulatory and Respiratory Organs, Excretion).

Peritrophic membrane, MARTYNOW (921).

Epithelium of mesenteron of *Bombus*, SEMICHON (1282).

Function of digestion, SAWAMURA (1219).

Food and digestion of *Galleria mellonella*, SIEBER & METALNIKOV (1292).

Alimentary canal, *Hydrophilus* and *Hydrous*, BORDAS (150).

Digestive system, larval, of *Spilosoma*, BORDAS (149).

Alimentary canal and proboscis of *Culex pipiens*, SCHAUDINN (1224).

Respiration, *Acridiidae*, EWING (472).

Glands of *Cynipidae* larvæ, RÖSSIG (1189).

Ecdysis glands, or Verson glands, NASSONOW (973) ; PLOTNIKOW (1089, 1090).

Salivary glands of *Periplaneta*, LEBEDEFF (866).

Salivary glands, *Nepa*, BORDAS (152).

Head glands, *Collembola*, HOFFMANN (694).

Wax-organs, *Melipona*, DREYLING (404).

Wax-organs of Honey-bee, DREYLING (403).

Wax-glands, *Chermes*, CHOLODKOVSKY (273).

Mandibular glands, *Lep.* larvæ, BORDAS (151).

Glands accessory to silk-apparatus, *Lepidoptera*, BORDAS (148).

Labial renal excretory organs, *Thysanura*, BRUNTZ (196).

Phagocytic organs of Insects, general, DAWYDOFF (354, 355).

Phagocytic organs, *Gryllidae*, DAWYDOFF (356) ; *Locustidae*, id. (357).

f. Sexual organs and Sex (incl. Hermaphrodites).

Gonapophyses, Klapálek (815, 816).

Morphology of genitalia, *Trichoptera*, Klapálek (817).

Comparative anatomy ♂ genitalia, *Tipulidae*, SNODGRASS (1323).

Male genitalia *Dolichopodidae*, SNODGRASS (1324).

Male and female sexual organs of *Trichoptera*, STITZ (1349).

Saws of *Cimbex* ♀, BISSCHOPP VAN TUINEN (131).

Intromittent organ in *Lepidoptera*, ZAUDER (1544).

Spermatogenesis, *Gryllus*, VOINOV (1460).

Spermatogenesis, *Blatta germanica*, WASSILIEFF (1488).

Spermatogenesis, *Syromastes*, GROSS (635, 636).

Ovaries and oogenesis, *Bacillus*, DAIBER (341).

Oogenesis in social *Hymenoptera* and other Insects, BRUNELLI (193).

Oogenesis, degeneration of ovules, *Dytiscus*, DUBUISSON (410).

Oogenesis in a *Chalcid*, peculiar eggs, EMBLETON (450).

Oocyte, perinuclear zone, GIARDINA (600).

Oogenesis, follicular epithel and nutrition of egg, *Melolontha*, MOLLISON (955).

Oogenesis in viviparous *Aphidæ*, STSCHELMKANOVZEW (1352).

Egg-tubes and eggs, *Rhyssa*, BUGNION (198, 199).

Sexes, comparative numbers, *Lep.*, TUTT, pp. 193-195, Ent. Rec. xvi ; CHAPMAN, t. c. p. 312.

Proportions of sexes in some raised broods of *Pteronus ribesii*, LOISELLE, p. 234, Feuille Natural. xxxiv.

Relation of primary and secondary sexual characters, KELLOGG (781).

Sex in *Aphidæ*, BALBIANI (77).

Determination of sex, SCHRÖDER (1242) ; Determination of sex, MARCHAL (906, 907).

Determination of sex, *Hymenoptera*, CASTLE (249) ; WHEELER (1516) ; Determination of sex, bee, PLATEAU (1088).

Determination of sex, loss of weight in pupa, abstinence from food as affecting metamorphosis, KELLOGG & BELL (782).

Gynandromorph *Lep.*, descriptive catalogue, pt. iv, SCHULTZ (1247).

Gynandromorphic palearctic *Lep.*, catalogue, SCHULTZ (1251).

Argynnis pandora, hermaphrodite, LAMBERTIE, p. lxxi, Pr.-verb. Soc. Linn. Bordeaux lix.—*Argynnis paphia* ♂ et hermaph. in cop., JOANNIS, p. 280, Bull. Soc. ent. France 1904.—Gynandromorphic *Cænonympha* and *Lasiocampa*, SCHULTZ, p. 170, Soc. ent. xviii.—Gynandromorph *Pieris*, fig. 5, and *Automeris*, figg. 6, 7, Psyche xi, p. 113, pl. x.—Gynandrous *L. ægon*, SMALL, p. 263, Entomologist 1904.—Gynandromorph *Melinæa*, LATHY (858).—Gynandromorph hybrid *Smerinthus*, GILLMER (608).—Gynandromorph of *Porthetria dispar*, KUSNEZOV, p. 203, Rev. Russe Ent. iv.

Hermaphrodite of *Leptura*, BICKHARDT, p. 303, Deutsche ent. Zeitschr. 1904.

Four Hermaphrodites, eur. *Apidae*, ALFKEN, p. 123, Soc. ent. xix.—Gynandromorphic *Ichneumon*, BERTHOUMIEU, p. 79, Bull. Soc. ent. France 1904.

Scent of male *Pieridæ*, DIXEY, pp. lvi-lx, P. ent. Soc. London 1904.

g. Physiology. (See also subsections b—f, and sections 2, 3.)

Radioactivity and *Lep. pupae*, TOMALA (1391).

Temperature experiments *Lepidoptera*, FRINGS (554) ; Temperature experiments, *Lycæna*, KRODEL (846).—Account of recent temperature and other experiments, VON LINDEN (882).

Results of feeding silkworms on wild and on cultivated leaves, SASAKI (1211).

Parthenogenesis and determination of sex, *Apis mellifica*, BUTTEL-REEPEN & BRESSLAU (212).

Parthenogenesis, *Apis*, BUTTEL-REEPEN (213).

Parthenogenesis, *Culex*, KELLOGG, p. 59, Allg. Zeitschr. Ent. ix.—Parthenogenesis in *Telenomus*, WASSILIEW (1489).—Parthenogenesis, hybrids, *Cimber*, VAN ROSSUM (1190).—Parthenogenesis *Epinophele*, BACHMETJEW (69).—Parthenogenesis in *Porthesia*, GARBOWSKI (584).

Artificial parthenogenesis, silkworm's eggs, PÉREZ (1021).

Regeneration larval legs, silkworm ; KELLOGG (780).

Regeneration pupa of *Lepidoptera*, HIRSCHLER (693).

Longevity of *Margarodes*, 15 years, MAYET, p. 206, Bull. Soc. ent. France 1904.

Tenacity of life, experiments, FIELDE (507).

Phosphorescence, BAGE (75).

Nature of poison of *Apis*, PHISALIX (1048-1050).

2. ETHOLOGY. HABITS, INSTINCT, including SENSES, PSYCHOLOGY. (Organs of Sense, see 1c, p. 83.)

The question of the bees' cell, DITTRICH (394).

Insect-psychology, FOREL (523, 524).

- Mental capacities of ants, WASMANN (1483).
 Recognition among ants, FIELDE (506).
 Hearing, ants, experiments, FIELDE & PARKER (508).
 Pupa sensitive to sound, SCHUSTER (1258).
 Ants and light-rays, FIELDE (502).
 Phototaxis, *Ranatra*, HOLMES (698).
 Sensitiveness of butterflies to light, PARKER (1011).
 Light that attracts *Lepidoptera*, PERRAUD (1031, 1032).
 Choice of flowers by *Syrphidae*, WILLIS & BURKILL (1533).
 Nervous system and respiration *Aceridiidae*, EWING (472).
 Prey-stinging and nidification, *Hymenoptera*, BRETHES (181).
 Instinct of *Pompilus viaticus*, PICARD (1080).
 Sleep, PICTET (1082).
 Permanent night-quarters, *Aeschna* etc., SLEVOGT (1305).
 Insect swarms on mountain-tops, POULTON, pp. xxiv-xxvi, P. ent. Soc. London 1904.
 Gregarious hibernation, KELLOGG, pp. xxiii, xxiv, P. ent. Soc. London 1904.
 Migration of *Crenis boisduvali*, BELL-MARLEY, p. 116, Entomologist 1904.
 Migration of *P. cardui*, AIGNER-ABAFI (19), see also *Lepidoptera*, *Nymphalidae*.
 Migrations of *Chermes*, variable, CHOLODKOVSKY (274).
 Migration of butterflies in the Amazons valley, GOELDI (616).
 Migration, butterflies, Ceylon, MANDERS (901).
 Popular summary, sounds of *Coleoptera*, HIRSCH (692).
 Stridulation of *Cychrus*, JONTEL, p. 60, J. N. York Ent. Soc. xii.
 Sound-production, *Lamellicorn Col.*, ARROW (38).
 Stridulation, *Passalidae*, SHARP (1284).
 Sound-producing caterpillar, PACKARD (1009).
 Courting, mayflies, MOORE, p. 289, Ent. News Philad. xv.
 Male and female relations, *Phassus schamyl*, SCHAPOSHNIKOW (359).
 Copula, insects of different genera, RAINBOW (1118).
Noctuids of different species in cop., DOD, p. 288, Canad. Ent. xxxvi.
 Copula and oviposition, *Anabius*, GILLETTE (607).
 Copula, no. of eggs, *Anasa*, GIRAULT (611).
 No. of eggs deposited by an ind., GIRAULT (609).
 Cop. between ♂ and hermaphrodite, JOANNIS, p. 280, Bull. Soc. ent. France 1904.
 Blood-sucking and oviposition etc. *Culicidae*, GOELDI (615).
 Oviposition of eggs of *Hemiptera* on the back, GIARD (597).
 Oviposition *Bombyx mori*, number of eggs, fertility, rapidity of deposition, GAL (579).
 Oviposition, *Orchelimum*, HANCOCK (656).
 Oviposition *Culex*, KNAB (822).
 Oothecas of *Cassididae* and their construction, MUIR & SHARP (969).
 Maternal solicitude, KIRKALDY (814).
 Protecting eggs, *Tectocoris*, DODD (395).
Idolothrips, eggs protected, FROGGATT (556).
Apis mellifica, nesting at large, BOUVIER, p. 187, Bull. Soc. ent. France 1904.
Bombi in Arctic regions, FRIESE (552).
 Biology of stingless bees, abstract of von Ihering's last year's paper, GRUNBERG (642).
 Symbiosis of bees and Acari, *Spolia zeylan.* i, pp. 117-119.
 Nests of wasps, DU BUYSSON (218).
 Nests of brazilian social *Vespidae*, DUCKE (411).
 Nest of *Vespa germanica*, census, PECHLANER (1014).
 Nest of *Vespa austriaca* with *rufa*, BERESFORD, p. 242, Irish Natural. 1904.

- Polistes*, habits, ADLERZ (14).
Chrysididæ at Parà, DUCKE (412).
 Recent work on ants, ESCHERICH (470).
 Habits of ants, FIELDE (501).
 Habits of ants; using larvæ for spinning silk, etc., FOREL (532).
 Social parasitism, ants, new form of, WHEELER (1522).
 Inquiline ants, WHEELER (1518).
 Mixed nests of ants artificial, FIELDE (503).
 Experiments on ants, temperature and submergence, FIELDE (504).
 Stopper-headed *Colobopsis*, WHEELER (1519).
 Crustacean-eating ant, WHEELER (1523).
Tomognathus sublævis, habits, WELLENUS (1508).
Formica sanguinea, composition of colonies as regards young etc., WASMANN (1484).
 Pupation of *Ectatomma tuberculatum*, COOK (311), WHEELER (1517).
Formica rubicunda and *Xenodusa*, relations, MUCKERMANN (968).
 The relations of *Lomechusa* and *Formica*, as regards production of pseudogynes, VIEHMEYER (1444).
 Symbiosis, ants and *Homoptera*, Java, PENZIG (1017).
 Ants and plants, symbiosis, FOREL (526).
 Ants as originators of mounds in swamps, HOLMGREN (701).
 Habits of Termites, establishing colony etc., JACOBSON (741).
 Termites, habits, founding nests, PÉREZ (1022).
Termitidæ, S. American, habits, SILVESTRI (1299).
 Nests etc. of Termites, SJÖSTEDT (1301).
 Termites as carriers of water, ELLIOT (448).
 Ants' nest, Insects, SILVESTRI (1298).
 Ants' nest, *Coleoptera*, BRUES (188).—*Ecitonidia* and its hosts, BRUES (189), FAUVEL (488).—Danish myrmecophilous *Col.*, JOHANSEN (764), NORMAND (983), SCHMIDT (1230), WASMANN (1484, 1486).—*Paussidæ*, WASMANN (1481).
 New suborder of Termitophilous insects, BREDDIN & BÖRNER (165).
 Termitophilous Insects, WASMANN (1485).
 Myrmecophilous and termitophilous *Hemiptera*, BREDDIN (167).
 Termitophilous *Coleoptera*, LEWIS (880), PÉRINGUEY (1028), WASMANN (1484A).
 Bees'-nest insects, Brazil, WASMANN (1482).
 Cave insects, ABSOLON (6), CHOBOUT (272), CSIKI (332), In Australia, LEA (864), MÜLLER (970). Cavern *Coleoptera*, ABEILLE (2).—Subterranean spring, n. g. *Dytiscidæ*, ABEILLE (3), ABEILLE (4), Basses Pyrénées, *Bathyscia*, 2 spp. n.—BREIT (174), CHOBOUT (268, 271), CSIKI (328), DODERO (397), MAYET (926), MÜLLER (971), PEYERIMHOFF (1041, 1042), REITTER (1142-1152).—African cave-beetle, REITTER (1154).—SCHATZMAYR (1223), ZOUFAL (1549).
 Dipteron in hot spring, abundance and continuance, POYNTON (1105).
 Marine larva of *Aphrosylus* commensal with *Balanus*, ROUBAUD (1200).
 Hypermetamorphic beetles and their hosts, triungulins and triunguloids, PIERCE (1086).
 Diptera mining in wings of live butterflies, SCHULZ (1256).
 Relations of *Anthophora* and *Melecta*, SEMICHON (1283).
 Parasitism of *Dermatobia*, WARD (1472, 1473).
 Pitcher-plant insects, JONES (766).
 Insect-catching grass, SCHWARZ (1260).
 Adobe walls, insects in, BEYER (123).
 Various insects, brief notes on habits, STEFANI-PÉREZ (1340).
 Notes on the habits of insects of various orders, ZAMBEU (1539, 1540).
 Habits of *Geotrupes*, OHAUS (992).
 Habits, nest-construction, *Attelabus bipustulatus*, GIRAULT (610).

- Habits of *Liodes* = *Anisotoma*, FLEISCHER (513).
 Larval habits, oviposition etc. *Oberca*, WEBSTER (1498).
 Habits of *Languria* larva, CHITTENDEN (265).
Hister carnivorous, DAVIS (352).
 Notes on habits of some Aculeate *Hymenopt.*, KOPP (840).
 Hymenoptera of *Rubus* and their parasites, HÖPPNER (705).
 Nest-habits *Trachusa serratulæ*, ADLERZ (15).
 Nest of Patagonian *Anthidium*, BRETHES (179).
Methoca ichneumonoides, habits, ADLERZ (16).
 Habits of *Ceropales maculata*, ADLERZ (13).
 Assembling, *Lasiocampa*, BATTLE, p. 320, Entomologist 1904.
 Drowning, *Lep.* larvæ, CHAPMAN, p. 81, Ent. Mag. xl.
 Processionary caterpillar, notes on, ROCQUIGNY-ADANSON (1183).
 Marching of *Hemileuca* larva, MARSHALL (916).
 Habits of *Clania*, an Australian *Psychid*, LITTLER (885).
Heterogynis, habits of, and species distinction, CHAPMAN (259).
 Emergence of *Limacodids* from cocoon, homeopraxy, KÜNCKEL (847).
 Construction of case, *Psychidæ*, BURKILL, P. Asiat. Soc. June 1903.
 Pupation habits, *Vanessa antiopa*, FIELD (500).
 Suspension of cocoons, variation in, *Telea*, COCKLE, p. 100, Canad. Ent. xxxvi.
 Spinning-habits, *Attaci*, WEBSTER, Canad. Ent. xxxvi, p. 133.
Lep. larvæ, stadium without feeding, CHAPMAN & others, P. ent. Soc. London 1904, pp. lxx-lxxii.
Conopidæ, habits of, DE MEIJERE (933).
 Habits of *Anopheles* in India, JAMES & LISTON (760).
 Predaceous larva of *Anopheles*, DYAR (426).
 Floor-maggot, attacking man, DUTTON etc. (419).
 Froth of *Aphrophora*, formation of, GIRAULT (612).
Vedalia and *Monophlebus*, STEBBING (1336).
 Hatching of *Lestes viridis*, PIERRE (1087) and p. 30 Bull. Soc. ent. France 1904.
Trichoptera larvæ in cases not prepared by themselves, SILFVENIUS (1296).
 Earwigs, habits of, BENNETT (100).
 Habits of *Gongylus*, a floral simulator, egg-case, WILLIAMS (1530).
Embia taurica, habits, KUSNEZOV (850).
 Leaf-rolling *Orthopteron*, CAUDELL (253).

3. DEVELOPMENT. (See also 1g. Physiology.)

- Physiology of metamorphosis, DEWITZ (377).
 Metamorphosis, origin of reparatory cells, intestinal epithelium of *Hymenoptera*, ANGLAS (33).
 Germinogony or specific polyembryony, *Proctotrypidæ* and *Chalcididæ*, MARCHAL (906).
 Polyembryonic development, determination of sex, MARCHAL (907).
 Amitosis in oogenesis, KELLOGG (779).
 Determinant of metamorphosis etc., BRUNELLI (194).
 Tracheæ and function of metamorphosis, ANGLAS (32, 34).
 Inanition and metamorphosis, BOHN (140).
 Embryology, appendage of 1st abdom. seg. *Tenebrio*, SELYS (1271).
 Development of male gonapophyses, historical, VERNON (1442).
 Development of head and thoracic appendages, *Bombyx*, abstract of paper of last year [VERNON (1602)], VERNON (1440).
 Postembryonic devel. of appendages of head and thorax, silkworm, VERNON (1441).

- Ocelli, development of in *Periplaneta* and *Cloëon*, REITZENSTEIN (1157).
 Development of wings, specially of *Coleoptera*, POWELL (1104).
 Development of rostrum of *Rhynclophora*, McCLENAHAN (930).
 Head-shield, Lep. pupa, HAVERHORST (666).
 Development of *Aphis ribis*, embryonic and post-embr., FLÖGEL (519).
 Parthenogenetic development, *Nematus*, DONCASTER (402).
 Central nervous system, post-embryonic changes, BAUER (93).
 Embryology of mesenteron, *Meloë*, CZERSKI (340).
 Metamorphosis of alimentary canal, DEEGENER (358).
 Irregular metamorphosis, *Charaxes*, retention of larval head, CHRÉTIEN,
 p. 108, Bull. Soc. ent. France 1904.
 Intracellular histolysis, *Muscidae*, PÉREZ (1020).
 Muscle, histolysis, *Muscidae*, PÉREZ (1019).
 Ecdysis. See glands.

4. GENERAL SUBJECTS.

Variation and Teratology.

- Physiological distinction of forms of variation, metabolism, VON LINDEN (881).
 Statistical and general discussion of variation in 24 species of various Orders, KELLOGG & BELL (783).
 Etiology of variation, *Lep.*, ROWLAND-BROWN, p. 17, Entomologist 1904.
 Sexual variation in *Pselaphidae*, PEYERIMHOFF (1043).
 Variation in size, *Lepidoptera*, wing, AUDEL (56).
 Variation in length of wing, *Aporia crataegi*, BACHMETJEW (72).
 Moisture and Lepidopterous variation, PICTET (1081).
 Seasonal forms in *Rhopalocera*, BUTLER (209).—Seasonal phases, *Calidryades*, BUTLER (208).
 Melanic varr. in *E. Tibet*, OBERTHÜR, p. 174, Bull. Soc. ent. France 1904.
Rhopalocera, 18 varr. of European, SCHULTZ, Soc. ent. xix, p. 9.
 Varr. of European *Rhop.*, specially Tuscan, VERITY (1436).
 Varr. of European *Lepidoptera*, OBERTHÜR (987).
 Varr. of Belgian *Lep.*, HAVERKAMPF (667).
 45 aberrations of exotic *Rhopalocera*, LATHY (858).
 Varr. of *Parnassius*, SCHULTZ (1248).
 Variation of *Lycaena lysimon*, GRAVES, p. 51, Ent. Rec. xvi.
Heodes phlaeus variation, CHAPMAN, pp. 167–172, Ent. Rec. xvi.
 Variation in number of spots, *Epinephele*, and damp seasons, BACHMETJEW (71).
 Varr. of *Epinephele tithonus*, RUSSELL, p. 125, cuts, Entomologist 1904.
 Variation of *Basilarchia proserpina* and allies, FIELD (499).
 Variation of *Hypolimnas bolina* in Fiji and Samoa, WATERHOUSE (1492).
L. ægeria, Guernsey var., LUFF, p. 190, Rep. Guernsey Soc. 1903.
 Variation of larva of *Deilephila lineata livornica*, GIARD, p. 204, Bull. Soc. ent. France 1904.
 Variation in *Philosamia*, fitness, CRAMPTON (324).
Zygena fausta and *hippocrepidis*, copula and variation, DUPUY, pp. 11, 12, Feuille Natural. xxxv.
Catocala nupta, blue var., SMITS, p. 128, Feuille Natural. xxxiv.
 Different melanic forms of *Venusia* in Yorkshire, PORRITT, p. 377, Naturalist 1904.
 Variation in *Larentiidae*, PROUT (1108).
 Variation of *Eupithecia*, DIETZE (380).

Results of breeding from *Amphidasys betularia* and var. *doubledayaria*, CASSALL, p. 49, Ent. Rec. xvi.

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Polymorphism, ants, FOREL (525); EMERY (452).

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Markings of *Lepidopterous* larvæ, KUSNEZOV (849).

Diffraction, scales *Lep.* and *Thysan.*, BALSAMO (79).

Cocoons, coloration of, DEWITZ (376); VERNON (1443).

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Gall of *Chermes orientalis*, CHOLODKOVSKY (274).—Galls of Italy, arranged phytologically, CORTI (322).—Stalk-galls, chiefly histological, HOUARD (719).—Cynipid galls on plants other than oak, KIEFFER (791).—Galls, *Lep.*, on *Toddalea* in Ceylon, PENZIG (1017).—Phylloxerine galls, PERGANDE (1023).—Introductory work, ROSS (1188).—The larval stimulus to gall-development, RÖSSIG (1189).—Gall-guests in Italy, STEGAGNO (1341).—Galls, collection and despatch, TAVARES (1368).—*Lep.*, galls, Algeria, WALSINGHAM (1470).—Gall on *Sagina ciliata*, TRAIL, p. 130, Ann. Scott. Nat. Hist. 1904.—TROTTER, Marocco, 6 galls, Marcellia iii, pp. 14, 15.

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Choice of flowers by *Syrphidae*, WILLIS & BURKILL (1533).

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Phylloxera in Europe, at present, BLUNNO (138).
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 Coccid destroying a noxious grass, FROGGATT (560).
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N.B.—The numbers in brackets refer to “Titles”; by their means it is intended to give a reference to every memoir containing a notice affecting the entomological fauna of each of the twelve regions here adopted. But synonymical notes and changes of systematic position are not included in these references. In addition to giving references to titles of works that actually add to the faunistic record of a region, there are also comprised references to a large number of works on local faunæ, or “stations.” In such cases the reference is, as a rule, made direct to the original work, not to our title-numbers, many of these local faunistic notes not being included at all in our list of titles.

In this Faunistic division varieties are not included: neither is a new genus (unless it is also a n. sp.), nor synonymy. When no subordinate locality is mentioned in connection with a memoir, it is to be understood that it refers to several divisions of the region indicated by the immediate subheading.

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FAUVEL (485); New South Georgia, n. g. *Staphylinidæ*.

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2. INSULAR (including NEW ZEALAND).

Madeira: *Coleoptera*, DESBROCHERS (361), *Laparocerus* sp. n. PETRI (1137), *Lixus* n. sp. *Hymenoptera*, *Formicidæ*, FOREL (531). *Diptera*, *Psychodidæ* n. sp., EATON (445).

Canary Ids.: *Hymenoptera*, *Aculeata*, SAUNDERS (1215), 8 spp. n. BERTHOUMIEU (112), *Ichneumonidæ*, 2 spp. n. *Diptera*, BECKER (95), *Peletophila* sp. n. *Hemiptera*, REUTER (1169), *Capsidæ*, 4 spp. n.

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Hawaiian Ids.: *Collembola*, CARPENTER (243). *Thysanura*, SILVESTRI (1297). *Mallophaga*, KELLOGG & CHAPMAN (784). *Macrolepidoptera*, MEYRICK (947, 948). *Hemiptera*, KIRKALDY (809), 6 spp. n. *Coccidæ*, KIRKALDY (810).—See also New Zealand, ALFKEN.

“Oceania”: *Hesperiidæ*, *Corone* n. sp., MABILLE (898).

Solomon Ids.: *Coleoptera*, JACOBY (749), *Mouhotina* & *Luperodes* n. sp. *Lepidoptera*, JORDAN (771), *Caprimima*, sp. n. *Rhopalocera* n. spp., ROTHSCILD (1197). *Metallochloa* n. sp., *Xanthomima* n. sp., WARREN (1476). *Phasmidæ*, KIRBY (805), *Necroscia*, sp. n.

Rossel Ids.: *Phasmidæ*, KIRBY (805), *Eurycantha*, sp. n.

New Pomerania: *Coleoptera*, WEISE (1504), *Hispidæ*, sp. n.

New Britain: *Coleoptera*, *Hispidæ* n. g., SHARP (1285). *Phasmidæ*, KIRBY (805), *Eurycantha*, sp. n.

Bismarck Archipelago: *Psocidæ* n. g., ENDERLEIN (455).

New Hebrides: *Coleoptera*, *Theca* n. sp., *Hyocis* n. sp., FAUVEL (486).

Tonga Ids.: *Hippoboscidæ* n. sp., SPEISER (1331).

Fiji Ids.: *Hemiptera*, HORVÁTH (714), *Colobathristinæ* n. sp.

Fiji & Samoa: *Lep. Rhop.*, WATERHOUSE (1492).

Marschall Ids., Insecta. *Chrysopa* 1 sp. n., SCHNEE (1232). KEMPNY (785), *Chrysopa* sp. n.

Thursday Ids.: *Phasmidae*, KIRBY (805), *Eurycantha*, sp. n.

Shortland Ids.: *Lepidoptera*, SWINHÖE (1364), *Tagiades* n. sp.

New Caledonia: *Coleoptera*, *Buprestidae*, *Tenebrionidae* n. spp., FAUVEL (486). RAFFRAY (1114), *Pselaphidae*, general work.

New Zealand & Hawaiian islands, *Insecta*, ALFKEN (22).

New Zealand: *Insecta*, HUTTON (726). New Zealand, Account of a year's collecting, WALKER (1467).

Coleoptera, BROUN (184), 41 spp. n., genn. n. Bounty Is., BROUN (185), *Hydrophilidae* n. g. RAFFRAY (1114) *Pselaphidae* general work, *Eupines* n. sp. *Hymenoptera*, COCKERELL (282) *Leioproctus*, 2 spp. n.

Lepidoptera, PHILPOTT (1047) Southern *Lep.* *Diptera*, HUTTON (727),

Phorocera, 7 n. spp.—id. *Limnia*, 2 spp. n. (728).—id. (730, Campbell

Is., *Calliphora* n. sp. *Neuroptera*, HUDSON (723), popular work.

Orthoptera, REHN (1128), *Ectobia*, sp. n. Chatham Is.: HUTTON (729),

Pleiopteron, sp. n.

Falkland Ids.: *Insecta*, VALLENTIN, few species, Mem. Manchester Soc. xlviii, No. 23, pp. 20–22.

Kerguelen Ids., ENDERLEIN (462), n. g. *Anoplura*.

Crozet Ids.: *Coleoptera*, ENDERLEIN (460), *Curculionidae*, 3 spp. n., n. g. *Hemiptera*, ENDERLEIN (461) n. g. *Henicocephalidae*.

3. PALÆARCTIC REGION.

(a.) Collective: i.e. papers referring to more than one of the following sub-divisions, *c*—*h*.

China, with the exception of Mongolia, is included in "Asia."

Coleoptera. ABEILLE (1), Mediterranean and Persia, *Buprest*, spp. n. BERNHAUER (107), *Aleocharini*, part 2, n. spp. DU BUYSSON (214), Basses Pyrénées and Amurland, *Elateridae*, 4 spp. n. DU BUYSSON (215), Bagdad, Spain, *Athous* n. sp. DANIEL (343), *Crepidodera*, revision, 2 spp. n. DANIEL & DANIEL (349), 10 spp. n., *Carabidae*, *Elateridae*, *Curculionidae*, *Bruchidae*, *Chrysomelidae*. DESBROCHERS (361), *Curculionidae*, 18 spp. n. DESBROCHERS (362), revision of *Lixus*, 5 spp. n. DESBROCHERS (363, 365), Caucasus and N. Persia, *Eusomus*, 4 spp. n. DESBROCHERS (364), incl. Arabia, *Curculionidae*, 5 spp. n. ESCALERA (467), Spain and Syria, *Acmaeodera*, 2 spp. n. FAUST (481), incl. Persia, Arabia, Mongolia, *Cleonides*, many spp. n. ✓FAUVEL (483), Sinai and Red Sea, *Staphylinidae*, 6 spp. n. FLEISCHER (514), *Scaritides*, tables, n. spp. ✓FORMÁNEK (534), Astrabad, Syria, Basses Alpes, *Barypithes*, *Omius*, spp. n. GANGLBAUER (582), Croatia, Slavonia, Servia, *Anophthalmus*, *Hydroporus*, *Riolus* n. sp. JACOBSON (740), Manchuria list, *Anomala* n. sp. ✓JAKOVLEFF (752), Mediterranean and West Asia incl. Buchara, Persia, *Sphenoptera*, 8 spp. n. KLIMA (820), *Trogophloeus*, revision, 3 spp. n., Amurland, Corfu and Turkestan. PETRI (1035), *Lixus* n. sp. PETRI (1036), Siberia, Alexander Mts., *Lixus* n. sp. PIC (1063), Amurland, *Cerambycidae*, spp. n., Spain, *Dorcadion* sp. n. PIC (1065), Siberia, Tokat, 9 spp. n. PIC (1068), 6 spp. n. PIC (1071), Mediterranean, Bagdad, Amurland, *Bryaxis*, *Mulacod.*, *Curcul.* spp. n. PIC (1072), Spain *Dorcadion*, France *Crepidodera*, Taurus *Chrysanthia* and *Titubaea* n. sp. PIC (1077), 22 spp. n. POPPIUS (1094), N. Russia, E. Siberia, Mongolia, *Mycetoporus*, *Choleva*, *Epurea*, *Simplicaria*, *Anatolica*, *Scythis* sp. n. RAFFRAY (1114), *Pselaphidae* general work. REITTER (1143), notes on localities etc. REITTER (1144), Pal. including Mongolia, *Saprinus*, 7 spp. n. REITTER (1148),

Cionus n. spp. REITTER (1149), Asia Minor, *Eurostus* sp. n., Galicia
Aphthona sp. n. REITTER (1152), 15 spp. n. REITTER (1155),
 Algeria, *Ammæcius*, Persia, *Lethrus*, *Prosodes*, Afghanistan and Gobi,
Acinæodera, spp. n. SCHILSKY (1227), incl. Buchara, *Urodon*, 3 spp. n.
 SEMENOV (1272), Mongolia and Tibet, *Elaphrus*, 2 spp. n. SEMENOV
 (1273), localities of various species. SOLARI (1326), E. Europe and
 Tangier *Curculionidae*, 8 spp. n. WAGNER (1462), Austria, Corfu, *Apion*,
 3 spp. n.

Lepidoptera. ALFKEN (23), *Prosopis*, 3 spp. n. BERTHOUMIEU (110),
Ichneumonidae, 11 spp. n. KOKUJEV (827), Corea, *Exetastes*, 2 spp. n.,
 W. China, *Ichneumonidae* spp. n., *Braconidae*, 4 spp. n. KOKUJEV (828),
 Ural and Transcaucasus, *Ichneumonidae*, 2 spp. n. KONOW (836), N. &
 Central Europe, *Lygæonematus* revision, 9 spp. n. KONOW (837), Pal.
 incl. Saghalin Id. *Sessiliventres*, 15 spp. n. KONOW (834), *Pachynematus*
 n. spp. KONOW (835), Europe and East Siberia, *Pteronius*, 3 spp. n.
 MORICE (957), *Colletes*, 6 spp. n. SCHMIEDEKNECHT (1231), Oran,
 Switzerland, *Ichneumonidae*, 3 spp. n. Localities for Palæarctic *Sphegidae*,
 SCHULZ (1254).

Lepidoptera. BARTEL (91), Palestine, *Noctuidæ*, 2 spp. n. DIETZE
 (380), *Eupithecia*, 16 n. spp. FUCHS (572), Sarepta, *Cucullia* n. sp.;
 Bornich, *Eriocrania* n. sp. HERZ (680), Korea, *Noctuidæ*, *Geometridæ*,
 320 spp., 18 spp. n. PÜNGELER (1110), *Noctuidæ* *Geometridæ*, 14 spp. n.
 ISCHETVERIKOV (1400), Mongolia, *Dasychira* sp. n., *Noctuidæ*, 3 spp. n.
 TUTT (1413), *Sphingidæ* Catalogue. JOANNIS, *Microlepidoptera* 5 novel-
 ties, Bull. Soc. ent. France 1904, p. 173.

Diptera. BECKER (96), *Lispa* monograph, 9 spp. n. ✓ SPEISER (1330),
 Europe, Sinai, Smyrna, *Hippoboscidae*, 2 spp. n.

Hemiptera. JAKOVLEFF (754), Siberia, Corea, Turkestan, Mongolia,
Heteroptera, 7 spp. n. JAKOVLEFF (755), Mantchuria, Central Asia,
 Transcaucasus, *Acanthosoma* sp. n., *Coriomeris*, 2 spp. n. MELICHAR
 (938), *Membracidae* and *Cercopidae*. REUTER (1162), Siberia and Trans-
 caspian, *Stenodema*, 2 spp. n. REUTER (1169), Germany, Mongolia,
 Crete, Central Asia, *Capsidæ*, 11 spp. n. MELICHAR (939), *Cicadidæ*.

Trichoptera. MORTON (963), *Hydroptilidæ*, numerous localities; Cintra
 sp. n., Britain sp. n.

(b.) Europe, collectively.

Coleoptera. GANGLBAUER (580), Central Europe, general work, n. g.,
 n. spp.

Hymenoptera. MAYR (928), Germany and S. Europe, *Chalcididæ*,
Proctotrypidæ, spp. n., *Ormyrus* revision.

Lepidoptera. RIESEN makes some corrections to his lists of *Macrolepi-
 doptera* published in Stettin Ent. Zeit. from 1887 to 1901; Ent. Zeit.
 Stettin. lxx, pp. 212-214.

Diptera. CZERNY (339), *Helomyza*, 3 spp. n.

(c.) British Islands.

THE FAUNA AS A WHOLE.

Insecta. Eddystone lighthouse, CLARKE (279). Disappearance, South-
 eastern Counties, WEBB, McDAKIN & GRAY (1496). Fire at Wicken fen,
 VERRALL, p. 112, Ent. Mag. xl.

Coleoptera. *Catops sericatus*, novelty, CHAMPION, p. 78, Ent. Mag. xl.
Agathidium bodium, novelty, CHASTER (261). *Calodera nigrata*, novelty,

NEWBERY, p. 251, Ent. Mag. xl. *Aulonium sulcatum*, novelty, POOL (1902).

Rhynchites sericeus withdrawn, CHAMPION, p. 79, Ent. Mag. xl.

Introduced Longicorns, BAGNALL, p. 262, Ent. Rec. xvi. Introduction of *Ptinus tectus*, HUDSON-BEARE, p. 4, Ent. Mag. xl. Doubtful or very rare British *Coleoptera*, NEWBERY, pp. 204, 205, Ent. Rec. xvi: HUDSON-BEARE, t. c. pp. 289-291. Doubtful species in the Power collection, NEWBERY, pp. 133, 134, Ent. Mag. xl. *Morimus funereus* in the Docks, ANSORGE, p. 117, Entomologist 1904. *Leptidea brevipennis* as British, WOOD & HOLLAND, Ent. Mag. xl. p. 60. Retrospect of a Coleopterist for 1903, HUDSON-BEARE, Ent. Rec. xvi, pp. 29-31. Ten years captures of new British beetles, DONISTHORPE, pp. 135-143, Tr. Leicester Soc. viii. British nomenclature of *Phytophaga* compared with Bedel, NEWBERY, pp. 80-83, Ent. Rec. xvi. Catalogue of British *Coleoptera*, BEARE & DONISTHORPE (94).

Hymenoptera. MORICE continues his notes of the characters of British *Tenthredinidæ*, Ent. Mag. xl, pp. 33 etc.

Crabro styrius and *Halictus semipunctulatus*, novelties, SAUNDERS, Ent. Mag. xl, p. 10. *Halictus freygessneri*, novelty, SAUNDERS (1217). *Rhadinocereus micans*, novelty, MORICE, p. 100, Ent. Mag. xl.

Lepidoptera. *Ceramidia butleri* at Marlborough, MEYRICK, p. 253, Ent. Mag. xl. *P. podalirius*, BRANDE, p. 264, Entomologist 1904, and MEYRICK, t. c. p. 284. TUTT, vol. IV of British *Lepidoptera*, *Sphingidæ* (1413). Curtis coll. at Sydney, nomenclature, WALKER (1468). *Deilephila livornica* in England 1904, Entomologist 1904, pp. 188, 189. *Deilephila livornica* in England, COSTE, Nature lxx, pp. 389 & 506, THOMAS, t. c. p. 455; in Ireland, MEEHAN, p. 628, t. c.

Colias hyale in England 1900, PILLEY, Tr. Woolhope Club 1900-1902, pp. 171-173. *V. cardui* swarm at Hunstanton, BARRETT, Ent. Mag. xl, p. 61.

Diptera. *Dilophus ternatus*, *Chyliza vittata*, *Tanypeza longimana*, novelties, BLOOMFIELD, Ent. Mag. xl, p. 60. *Corethra obscuripes*, novelty, COLLIN, p. xxxiii, P. ent. Soc. London 1904. *Psychodidæ*, 2 spp. n., EATON (445). *Hydrotea pilipes*, novelty, GRIMSHAW (632). *Oncomyia sundewalli*, novelty, GRIMSHAW (633). *Asteia elegantula*, novelty, JENKINSON, p. 4, Ent. Mag. xl. *Periscelis annulata*, *Ochthera mantispa*, novelties, LAMB, p. 277, Ent. Mag. xl. *Callicera yerburyi* n. sp., VERRALL, Ent. Mag. xl, p. 229. *Neoitamus cothurnatus*, *Anthrax circumdata*, novelties, VERRALL, p. xxxiii, t. c. *Dolichopododidæ*, catalogue, novelties, VERRALL (1438).

Catalogue of *Cecidomyiidae*, COLLIN (298). The British *Diptera brachycera*, VERRALL, pp. xxviii-xxxii, P. ent. Soc. London 1904. *Orycera dives*, confirmed, Perth, CARTER, p. 16, Ent. Mag. xl. Retrospect of a Dipterist for 1903, COLLIN, pp. 57, 58, Ent. Rec. xvi. *Trypetidæ*, some rare, DALE, pp. 212, 213, Ent. Mag. xl, and cf. VERRALL, t. c. p. 238. Notes on desiderata, VERRALL, pp. 165, 166, Entomologist 1904.

Hemiptera. *Dryinus confusus*, *Salda setulosa*, novelties, BUTLER, p. 275, Ent. Mag. xl.

Trichoptera. *Oxyethira* n. sp., Rannoch, MORTON (963).

Odonata. Notable captures and novelty 1902, 1903, LUCAS (890).

Orthoptera. The British *Stenobothrus*, BURR, pp. 273-275, Ent. Rec. xvi.

Collembola. CARPENTER & EVANS (245); novelties, n. sp. *Aenylla brevicauda*, novelty, CARPENTER, p. 198, pl. xa, Irish Natural. 1904.

LOCAL LISTS.

The arrangement adopted in each Order is roughly, Channel Islands, England from South to North and from West to East, Wales, Scotland, Ireland.

Insecta. Guernsey, LUFF, pp. 197–199, Rep. Guernsey Soc. 1903 (incl. *Calosoma sycophanta*). Scilly isles, *Diptera* and *Col.*, YERBURY, pp. 154–156, Ent. Mag. xl. Dorset, RICHARDSON, first appearance, 1902, P. Dorset Club xxiv, p. 187. Hastings, BLOOMFIELD, p. 32, Rep. Hastings Soc. xi. Ashford, *Lep.* and *Dipt.*, JEFFREY, Rep. E. Kent Soc. (2) iii, p. 25 and iv, p. 35. Faversham, chiefly *Col.*, in old hedges; CHITTY, pp. 100–103, Ent. Mag. xl. Marlborough, MEYRICK, pp. 35–44, Rep. Marlbor. Soc. lii. Horsley, LUCAS, pp. 9–13, P. South London Soc. 1903. Hertfordshire, *Lep.* and *Col.*, GIBBS, pp. 139–141, Entomologist 1904. Amersham, *Col.* and *Lep.*, TURNER, pp. 3–6, P. South London Soc. 1903. Cambridgeshire, FARREN and others (479). Suffolk, TUCK, Entomological notes, Tr. Norfolk Soc. vii, pp. 635, 636. Norfolk Broads; BROWNE (186). Yorkshire, many notices see Naturalist 1904, Index, pp. 392–395. Hull; FOSTER, H. M., List of the aquatic larvæ of flies occurring in the Hull district, Tr. Hull Club iii, pp. 180, 181. Aberdeen, *Diptera* and *Tenthredinidæ*, BLOOMFIELD, p. 193, Ann. Scott. Nat. Hist. 1904. South Kerry, BOUSKELL, F., Three weeks in the wilds of, with notes on the Insects and Plants, Tr. Leicester Soc. pp. 49–60. Sligo, *Col.*, HALBERT, pp. 194–196, *Hemipt.*, HALBERT, pp. 196, 197, *Aptera*, CARPENTER, pp. 197, 198, Irish Natural. 1904.

Coleoptera. Guernsey, *Calosoma sycophanta*, LUFF, p. 59, Ent. Mag. xl. Plymouth, KEYS, p. 14, t. c. Looe, *Strangalia aurulenta*, WOOD, p. 261, t. c. Isle of Wight, HUDSON BEARE, t. c. p. 257. New Forest, *Trachys parvulus*, DONISTHORPE, p. xxxix, P. ent. Soc. London 1904. New Forest, DONISTHORPE, p. 325, Ent. Rec. xvi. Dean Forest, *C. castaneus* etc., MORSE, p. 138, Ent. Mag. xl. Tewkesbury, DONISTHORPE, p. 206, Ent. Rec. xvi. Berkshire, JOY, pp. 39, 40, Ent. Mag. xl. Berkshire, JOY, p. 182, t. c. Berks, *Orochares*, JOY, p. 182, t. c. Berkshire, *Bledius femoralis*, JOY, p. 237, t. c.; FOWLER, t. c. p. 238. Berkshire, JOY, p. 279, t. c. Wokingham, *Bem. obliquum*; Oxford, *Medon dilutus*; JOY, t. c. p. 14. Oxford, *Plagiodera*, WALKER, p. 210, t. c. Oxford, *Apion brunnipes*, HOLLAND, p. 108, t. c. Bagley Wood, WALKER, p. 138, t. c. KENT, *Omalium septentrionis*, DONISTHORPE, p. 149, Ent. Rec. xvi. Canterbury etc., MAUDSON, p. 46, Rep. E. Kent Soc. (2) i, and p. 24, op. cit. iii. Sheppey, WALKER, p. 259, Ent. Mag. xl. Hastings, BENNETT, p. 326, Ent. Rec. xvi. Surrey, CHAMPION, p. 256, Ent. Mag. xl. Surrey, W. E. SHARP, Ent. Mag. xl, p. 43. Surrey, *Peritelus*, DONISTHORPE, p. 150, Ent. Rec. xvi. Woking, *Bagois brevis* etc., WALKER, p. 158, Ent. Mag. xl. Woking, *Conopalpus*, CHAMPION, p. 183, t. c. North London, *Clytus arcuatus*, WILLIAMS, p. 167, Entomologist 1904. Henley-on-Thames, *Panagæus*, FOWLER, p. 238, Ent. Mag. xl. Brandon, JENNINGS, p. 87, t. c. Brandon, TOMLIN, p. 60, t. c. Sherwood, *Rhinomacer*, TAYLOR, p. 158, t. c. Sherwood, TAYLOR, p. 258, t. c. Norfolk and Suffolk, MORLEY (960). Norfolk, EDWARDS, Tr. Norfolk Soc. vii, pp. 744–746. Norfolk, *Odontæus*, SMITH, p. 210, Ent. Mag. xl. Norfolk, *Odontæus*, ATMORE, p. 238, t. c. King's Lynn, *Ceuth. angulosus*, NEWBERY, p. 86, t. c. Norfolk, *Tetropium castaneum*, ATMORE, p. 85, t. c. Buxton, *Meloë*, TAYLOR, Ent. Mag. xl, p. 136. Derwent valley, *Metoeus*, BAGNALL, p. 159, t. c. Derwent valley, *Bembidium*, BAGNALL, p. 259, t. c. Derwent valley, *Longicornia*, BAGNALL, p. 86, t. c. Derwent valley, *Triplax ænea*, BAGNALL, p. 108, t. c. Derwent valley, *Monohammus sutor*, BAGNALL, p. 59, t. c. Yorkshire, *Geodephaga*, CARTER, pp. 148–150, Naturalist 1904. Knutsford, *Lampyrus*, OLDHAM, p. 316, Naturalist 1904. Chelford, *Prionus*, OLDHAM, p. 315, t. c.

Lake District, *Geotrupes typhaeus*, OLDHAM, p. 284, ARMITT, p. 316, Naturalist 1904. Cumberland, DAY, pp. 135, 136, Ent. Rec. xvi. Northumberland, Durham, *Clinocara*, BAGNALL, p. 108, Ent. Mag. xl. Northumberland and Durham, additions, BAGNALL, pp. 260-262, Ent. Rec. xvi. Gibside, *Triplax*, BAGNALL, p. 210, Ent. Mag. xl. Isle of Man, TOMLIN, pp. 177-179, t. c. Isle of Man, *Otiorrhynchus*, BAILEY, pp. 180, 181, t. c. Isle of Man, *Longitars. curtus*, TOMLIN, p. 60, t. c. Wales, *Quedius longicornis*, BEDWELL, p. 60, t. c. N. Wales, *Lamia*, JACKSON, p. 211, t. c. Snowdon, BEDWELL, p. 1, P. ent. Soc. London 1904. S. Wales, TOMLIN, *Lath. angusticollis*, Ent. Rec. xvi, p. 18. Peebles, BLACK, Ent. Rec. xvi, p. 17. Wigtownshire, GORDON, pp. 78-80, Ent. Rec. xvi. Ramnoch, WOOD, p. 260, Ent. Mag. xl. Co. Down, *Dytiscidae*, JOHNSON, p. 93, Entomologist 1904.

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(d.) *North Europe and Siberia* [see also (a.) and (b.).]

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(e.) *Central and Eastern Europe*, incl. *Denmark* [see also (a.) and (b.) and for *France* (f.), for *Caucasus* (h.).]

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(f.) *France* [see also (a.), (b.) and (g.)].

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Hymenoptera. GIARD (599), Argenteuil, *Dacnusa* sp. n. GADEAU DE KERVILLE (578), Normandy. KIEFFER (793), S. France, *Evania* sp. n. ZAVATTARI (1547), French Pyrenees, general list. Supplément au catalogue des Mellifères du Sud-ouest, PEREZ, Act. Soc. Bordeaux, pp. 5-7. DUCHASSEINT, Auvergne, *Parnopes carnea*, Feuille Natural. xxxiv, p. 267.

Lepidoptera. ANDRÉ, Saône-et-Loire, *Rhopalocera* (31). CHRÉTIEN (276), Basses Alpes, *Anacamptis, Coleophora* and *Nepticula* sp. n. PETRY (1040), Pyrenees, *Gelechiidae*, 2 spp. n. VIARD, *Microlepidoptera*, novelties, Bull. Soc. ent. France 1904, p. 38. North France, *Rhopalocera*, GURNEY, pp. 324, 325, Entomologist 1904. MEADE-WALDO, Normandy, Entomologist, pp. 301-303. Touraine, WALDO, Entomologist 1904, pp. 69-71. DEWITZ, Villefranche, Rhone, by light, Allg. Zeitschr. Ent. ix, pp. 382-386, 401-408. BALESTRE, Alpes maritimes, *Plusia*, 6 spp. SIEPI, Feuille Natural. xxxiv, p. 247, Sainte Baume, *Parnassius mnemosyne*. SIEPI, t. c. p. 248, Marseille, short list.

Diptera. GIARD (598), Garden of the Luxembourg, Paris, rarities. GIARD (599), Argenteuil, *Agromyza simplex*. PANDELLÉ (1010), *Muscidae*, Catalogue. VILLENEUVE (1459), Catalogue, continuation, *Ploas* sp. n., *Dysmachus* sp. n. PORTEVIN (1101), Normandy, *Syrphidae*, list. VILLENEUVE, 3 novelties, Bull. Soc. ent. France 1904, p. 235. POUJADE, Digne, id. Fontainebleau, *Echinomyia popelii*, novelty, Bull. Soc. ent. France 1904, p. 22. VILLENEUVE, *Anthomyiidae*, 24 novelties, pp. 190, 191, Bull. Soc. ent. France 1904. LESNE, Paris, *Penthetria holosericea*, Bull. Soc. ent. France 1904, p. 153.

Aphaniptera. OLIVIER (995), L'Allier.

Hemiptera. GUÉRIN & PÉNEAU (645), West France, descriptive work. OLIVIER (994), L'Allier, *Homoptera*, list with remarks. PÉNEAU (1015), *Hebrus* of France. PÉNEAU (1015), Nantes, novelties. PÉNEAU, Nantes, novelties, Bull. Soc. Ouest France (2) iv, pp. xii, xiii. FLEUTIAUX, Seine, *Orthotylus scotti*, p. 197, Bull. Soc. ent. France 1904. LAMBERTIE, Premier supplément à la contribution à la faune des *Hémiptères* (*Hétéroptères, Cicadines* et *Psyllides* du Sud-Ouest de la France, Act. Soc. Bordeaux lix, pp. 21-30; also cf. Pr. verb. lix, pp. xlvii, xlviii.

Orthoptera. Coëvrons, Mayenne, HOULBERT, C.R. Ass. Franc. xxxii, 2, pp. 750-753. Meuse, *Mantis*, VUILLEMIN, pp. 27-29, Feuille Natural. xxxv. SIEPI, Saint-Baume, *Saga serrata*, Feuille Natural. xxxiv, p. 248.

(g.) *Southern Europe and Mediterranean Basin* [see also
(a.), (b.) and (f.) and for Caucasus and Transcaucasus (h.).]

Insecta. CHAMPION (258), Moncayo, *Col.* and *Hemipt.* FUENTE (573), Ciudad Real, *Coleoptera*, *Orthopt.*, *Hemipt.*, novelties. NAVÁS (975), Spain, *Coleoptera*, *Lep.*, *Orthopt.*, *Neuropt.* sp.? NAVÁS (975), Sierra de Guara, *Ephippiger* sp. n., *Acerid.* 2 spp. n. CORTI (322), Galls of Italy. TROTTER & CECONI (1399), Italian galls, arranged according to plants. COBELLI, Rovereto *Hym. Homopt.* 4 spp. *Allg. Zeitschr.* Ent. ix, pp. 11, 12. WERNER (1510), Bosnia and Herzegovina, account of journey. Majorca, MUSCHAMP, pp. 221, 222, *Ent. Rec.* xvi. Cephalonia, SANGIORGI, *Atti Soc. Modena* xxxvi, pp. 72-93.

Coleoptera. NORMAND (983), Albères, subterranean, list. DESBROCHERS (367), Spain, Portugal, Bosnia, *Thylacites*, 3 spp. n. PIC (1076), Spain and Balearic islds., *Anthicus*, Algeria, *Tychius* sp. n. REITTER (1156), Spain, *Athous*, 5 spp. n. UHAGON (1415), Spain, *Zabrus*, monograph, 2 spp. n. FERRER Y VERT, Barcelona, short lists, *Butll. Inst. Catalan.* i, pp. 14, 15, 78-80 & 105-111. FONT, Coves, short list, *Butll. Inst. Catalan.* i, pp. 116-119. FUENTE, Moncayo, *Bol. Soc. Aragon* ii, pp. 232, 233. FRANÇOIS (539), Carthage, *Thorectes* sp. n. DODERO (397), Sardinia, *Bythinus* n. sp. Capri, N. Italy, *Bathyscia*, 3 spp. n. REITTER (1145), Lucano, n. g. *Endomychidae*. VITALE, Messina, *Boll. Natural.* xxiv, pp. 26-28, 37-40, 54-56, 74-76. DODERO, Italy, *Bathyscia*, list of, *Nat. Sicil.* xvii, pp. 121-123. CARRET (246), N. Italy, *Athous* sp. n. MÜLLER (970), Dalmatia, *Apholeuonius*, 2 spp. n. MÜLLER (972), Dalmatia, *Bythinus* sp. n., *Alphitophagus* sp. n. GANGLBAUER (583), Meleda isld., Dalmatia, list with 1 sp. n. MÜLLER, Austrian coast, *Munchen. Kol. Zeitschr.* ii, pp. 314-320. ZOUFAL (1549), Herzegovina, *Silphidae*, 1 sp. n. REITTER (1142), Herzegovina, *Bathyscia* sp. n. REITTER (1141), Herzegovina, *Dicerca* sp. n. REITTER (1151), Herzegovina, *Elater* sp. n. MÜLLER (971), Herzegovina, *Antroherpon* sp. n., *Bathyscia* sp. n. PENECKE (1016), Herzegovina, *Quedius* sp. n. BREIT (174), Herzegovina, *Anophthalmus* sp. n., Piedmont, *Lathrobium* sp. n. PIC, Greece and Corfu, *Malachius*, *Bull. Soc. ent. France* 1904, p. 42. CSIKI (329), Servia, *Otiorrhynchus* sp. n., *Phytonomus* sp. n. CSIKI (331), Servia, *Platynus* sp. n. RAGUSA (1115), Sicily. REITTER (1147), Sicily, *Pselaphus* n. sp. VITALE, *Nat. Sicil.* xvii, pp. 77 etc.; Sicily, *Curculionidae*, novelties. VITALE, *Nat. Sicil.* xvii, pp. 26-41; Sicily, *Cossonini*. RAGUSA, xvii, pp. 49-54, 84-92; *Coleotteri nuovi o poco conosciuti della Sicilia*. RAGUSA, *Nat. Sicil.* xvii, pp. 21-24; Sicily, *Curculionidae*. FIORI (509), Sicily, *Malthodes*, 2 spp. n. SCHULTZE (1252), Corsica and Algeria, *Baris*, 2 spp. n. FAUVEL (484), Algeria, *Geostiba* sp. n. DEVILLE (374), S. France and Algeria, *Dyschirius* sp. n. DU BUYSSON (216), Morocco, *Agriotes* sp. n. NORMAND (982), Tunis, *Pselaphidae*, 5 spp. n. PIC (1075), Asia Minor, *Dermest.*, *Ceton.*, *Malacod.*, *Cistelid.*, *Anthacid.* sp. n. PIC (1073), Taurus, *Clytus* sp. n. PIC (1069), Egypt and Anatolia, *Laria* and *Urodon* spp. n. PIC (1061), S. Europe, Asia Minor, *Attagenus*, *Malacoderm.*, *Anthicus*, *Curcul.*, spp. n. PIC (1059), Syria, *Cardiophorus* sp. n. PIC (1058), Tokat, *Prionychus* n. sp. DEMAISON (360), Asia Minor, *Oochrotus* sp. n. K. DANIEL (347), Crete and Asia Minor, *Leptura*, 2 spp. n.

Hymenoptera. ANTIGA and others (36), Catalonia, *Aculeata* and *Chryside*. BERTHOUMIEU (112), Spain, *Ichneumonidae*, 4 spp. n. BERTHOUMIEU (113), Escorial, *Catadelpus* sp. n. DUSMET (417), Alicante, *Nastor* n. sp. GARCIA (585), Spain, Syria, Cairo, *Chrysid.* 4 spp. n. GARCIA (586), *Hedychridium* sp. n. GARCIA (587), Spain, *Bembex*,

3 spp. n. GARCIA (588), Madrid, *Nysson* n. sp. SAUNDERS & POULTON (1214), Majorca and Spain, *Aculeata*, 5 spp. n. MANTERO (904), Island of Giglio, n. g. *Bracon*., *Pompilus* n. sp. MANTERO (902), North Italy, *Braconidae*, 82 spp. STEGAGNO (1341), Guests in galls, Italy. BUYSSON (217), Zante, *Hedychridium* sp. n., Turkey, *Chrysis* sp. n. KIEFFER (794), S. Eur. and Tunis, *Proctotryp*., 23 spp. n. FOREL (532), Kairouan, list, *Oxyopomyrmex* sp. n., *Biskra Stenamma* n. sp. KIEFFER (793), *Gasteruption* sp. n. FOREL (532), Jerusalem, short list.

Lepidoptera. CHAPMAN (259), Canales, *Heterogynis* sp. n. CHRÉTIEN (275), Segovia *Tephroclystia* sp. n. TUTT (1414), Vigo, *Cænonympha* n. sp. WALSINGHAM (1469), Spain and Morocco, *Microlep*. spp. n. N. Spain, *Geometridæ*, PROUT, pp. 284-289, Ent. Rec. xvi. Sierra de la Demanda and Moncayo, CHAPMAN, pp. 85 etc., etc., Ent. Rec. xvi. MALUQUER, Ubach, Tarrasa, short list, Butl. Inst. Catalan i, pp. 56-59. BROWNE, Mediterranean, Entomologist 1904, pp. 186-188, 204-207. FLETCHER (517), Malta, list. VERITY (1436), Pistoja, list. VERITY (1437), Tuscany, *Rhop*. varr. VERITY, Italy, *Ochrostigma melagona*, novelty, Bull. Soc. ent. Ital. xxxvi, p. 11. PERLINI, Cat. of Italian *Lep*. continued, Riv. ital. Sci. Nat. xxiv, pp. 1 etc., etc. CANNAVIELLO, S. Italy, Riv. ital. Sci. Nat. xxiv, pp. 16-19 etc. FLECK (511), Dobrudscha, account of travelling. REBEL (1122), Bosnia, Herzegowina, Catalogue and comparative distribution, *Tineidæ*, 6 spp. n. ZICKERT (1548), S. Italy, *Zygaena*. RAGUSA, Sicily, novelties, Nat. Sicil. xvii, pp. 18-20. PETRY (1039), Corsica, *Scoparia*, *Conchylis*, *Lita*, *Stagmatophora*, *Lithocolletis*, sp. n. WALSINGHAM (1470), Algeria, *Tineidæ* n. spp., n. genn. CHRÉTIEN, Algeria, *Pyralidæ* and *Microlep*., Naturaliste 1904, pp. 45, 46. FONTAINE (538), Asia Minor, list. BARTEL (90), Syria, *Eriogaster* sp. n.

Diptera. CORTI (321), Portugal, list of 86 spp. TROTTER (1396, 1397), Galls, *Perrisia* n. sp. KIEFFER (792), Vallombrosa, *Cecidomyiidae*, 2 spp. n. BEZZI (124), Bosnia, *Clinocera* n. sp. EATON (445), Algeria, *Psychodidæ* sp. n. MARCHAL (911), Cyprus, *Cecidom*. sp. n. GILES (604), Asia Minor, *Culex fuscatus*.

Aphaniptera. KOHAUT (824), Bosnia, *Typhlopsylla* n. sp. KOHAUT (825), Bosnia, *Typhlopsylla* n. sp. ROTHCHILD, N. (1192), Egypt, 4 spp. n.

Hemiptera Heteroptera. REUTER (1166), Soria, *Globiceps* n. sp. ARDID, Zaragoza, Bol. Soc. Aragon. ii, pp. 270-273. Cyprus, KIRKALDY, *Rincoti* raccolti dal Dott. G. Ceconi nell' isola di Cipro, Bull. Soc. ent. Ital. xxxvi, pp. 94-98. SPEISER (1332), Egypt, *Polycetes* sp. n.

Homoptera. COBELLI, R., Contribuzioni alla *Cicadologia* del Trentino. Verh. Ges. Wien liv, pp. 556-558. HORVÁTH (716), Spain, Morocco, Asia Minor, *Caliscelis*, 3 spp. n.

Coccidæ. BERLESE (106), S. Italy, *Mytilaspis* n. sp.

Neuroptera. VENTALLÓ, Tarrasa, Butl. Inst. Catalana i, pp. 113-115. NAVÁS (974), *Planipennia*, *Perlidae*, *Ephemeridæ*, spp. n. NAVÁS (976), *Myrmeleonides*, 1 sp. n. KIRBY (806), Amanus Mts., *Chasmatoptera* sp. n. *Perlidae*. MORTON, Algeria, *Strobliella minuta*, Ent. Mag. xl, p. 39. *Termitidæ*. SJÖSTEDT (1301), Algeria and Tangier, *Termitidæ*, 2 spp. n. *Thysanura*. SILVESTRI (1300), Umbria, *Machilidæ*, 2 spp. n. KUSNEZOV, Crimea, *Japyx solifugus*, Rev. Russe Ent. iv, p. 227.

Orthoptera. MEI (932), Alpes maritimes, *Locust*., *Acrid*. SHUGUROV, S. Russia, *Acrida turrita*, distribution, p. 255, Rev. Russe Ent. iv. WERNER (1511), Asia Minor, *Saga*, list.

(h.) *Caucasus* and *West and Central Asia*, including *Arabia* [see also (a.) and (b.)]: for *Tibet* see 6, for *Mediterranean Asia* see (g.).

Insecta. SAHLBERG (1203), expedition with lists *Col.* and *Hemipt.*

Coleoptera. BAECKMANN (74), Turkestan, *Anoplistes* n. sp. CHOBAUT (270), Arabia, *Thorictus* n. sp., *Mordellistena* n. sp. ESCHERICH (469), Turkestan, Tibet, Algeria, *Meloidæ*, 9 spp. n. JAKOVLEFF (753), Tiflis, *Sphenoptera* n. sp. LESNE (876), Lob-Nor, *Xylogenes* n. sp. LUZE (895), Russian Centr. Asia, *Staphylinidæ*, 32 spp. n. LUZE (896), Central Asia, *Staphylinidæ*, 2 spp. n. PETRI (1037), Turkestan, *Lixus* n. sp. PIC (1079), Araxes Vall, Mongolia, Bucharâ etc., *Curculionidæ* spp. n. PORTEVIN (1100), Mongolia, *Liodes*, sp. n. REITTER (1150), Transcaucasus, *Eusomus* sp. n. REITTER (1153), Caucasus, *Mycetophagus* n. sp. SCHMIDT (1230), East Bucharâ, *Thorictus* sp. n. SEMENOV (1275), Transcaucasus, *Stomis*, 2 spp. n. SEMENOV (1281), Lake Balkash, *Nyctiphantus* n. sp. TSCHITSCHERIN (1401), Caucasus, *Trechus* sp. n. TSCHITSCHERIN (1402), N. Persia, *Stomis* n. sp. WATERHOUSE (1491), *Acmæodera* n. sp., *Steraspis* n. sp. WEISE (1505), Mesopotamia, *Pseudocolaspis* sp. n.

Hymenoptera. FOREL (527), Bucharâ, list, Gobi, *Formica* sp. n.

FOREL (532), *Caucasus*, ants, list. KONOW (833), Caucasus, *Entodecta* sp. n. RUZSKY (1202), Caucasus and Crimea, *Leptothorax* sp. n.

Lepidoptera. PÜNGELER (1111), Centr. Asia, 10 spp. n. SAUBER (1213), Anklam, *Crambus*, *Phlyctenodes* sp. n. SCHAPOSCHNIKOV (1221), Caucasus, *Macrolep.* Catalogue, 575 spp.

Diptera. SPEISEN (1331), Merv, *Lychnia exornata*.

Hemiptera. JAKOWLEW (757), Koukou-noor, *Palomena* n. sp. HORVATH (717), Turkestan, lists of *Heteroptera* and *Homoptera* spp. n. REUTER (1164), Persia, *Capsidæ*, 7 spp. n. REUTER (1166A), Aden, *Capsidæ*, 2 n. spp. REUTER (1167), Turkestan, Mongolia, E. Siberia, *Capsidæ*, 12 n. spp.

Termitidæ. JACOBSON (741), Turkestan, *Hodotermes*, 2 spp. n.

4. AFRICA (TROPICAL & SOUTH). For North Africa see 3 (g.): for Comoro and Aldabra Ids. see 5. Socotra, see 3 (h.).

Insecta. TROTTER (1398), Galls of Erythrea. WASMANN and others (1485), White Nile, Termitophilous *Ins.*, 10 spp. n.

Coleoptera. AURIVILLIUS (57), *Cerambycidæ*, 13 spp. n., genn. n. BERNHAUER (107), W. Africa, *Dinusa æthiopica* and *Platyola simplex* n. sp. BERNHAUER (108), W. Africa, *Staphylinus*, *Leistotrophus* sp. n. BERNHAUER (109), Eleusis, *Lispinus*, *Holosus*, *Omalium*, *Osorius* spp. n. BOILEAU (143), *Lucanidæ*, 3 spp. BOURGEOIS (161), S. Africa, *Chlamydolycus* n. sp. CAMERON (221), Perim, *Di glossa*, 2 spp. n. DISTANT (382), S. Africa, *Cerambycidæ*, monograph. FAUST (481), *Cleonides* many spp. n., n. g. FAUVEL (485), *Staphylinidæ* n. spp. FAUVEL (487), Upper Egypt, *Platyprosopus* sp. n. FAUVEL (489), *Staphylinidæ*, 14 spp. n. FELSCHÉ & D'ORBIGNY (494), Cameroons, *Copridæ*, 3 spp. n. GEBIEN (589), Cameroon, *Tenebrionidæ*, 19 spp. n., n. g. GEBIEN (590), *Pycnocerini*, 6 spp. n. GESTRO (595), W. Africa, *Cælenomenodera*, 2 spp. n. GESTRO (596), *Platypria* n. spp. GROUVELLE (639), *Nitid.*, *Colyd.*, *Cucuj.*, *Mycetoph.*, 8 spp. n. HAGEDORN (649), Caffraria, *Scolytoplattypus* n. sp. HARTMANN (663), E. Africa, *Curculionidæ*, 46 spp. n., genn. n. HAUSER (664), *Cetoniidæ*, 5 spp. n., genn. n. HEATH (668), E. Africa, *Calorrhina* and *Eudicella*, n. sp.

- HELLER (674), Cameroons, *Curculionide*, 14 spp. n. HELLER (675), E. Africa, *Zygopides* sp. n. HORN (709), E. Africa, *Cicindelide*, 4 spp. n. HORN (711), Cameroons, *Cicindelide*, 2 spp. n. HORN (712), E. Africa, *Megacephala* sp. n. JACOBY (745), *Chrysomelide*, 63 spp. n. JORDAN (768), *Anthribide*, 8 spp. n. JORDAN (770), Brit. E. Africa, *Cerambycide*, 4 spp. n. KERREMANS (786), Trop. Africa, *Julodines*, descriptions. KOLBE (830), *Copride*, *Dynastid.*, *Ceton.*, *Psammodes* spp. n. KOLBE (831), Cameroons, *Valgide* n. g. LEWIS (880), *Histeride*, 4 spp. n. MANTERO (903), Somaliland and Scioa, *Rhogas*, 3 spp. n. MARSHALL (915), *Hipporrhinus* monograph, 21 spp. n. MÖLLENKAMP (954), W. Africa, *Metopodontus* sp. n. MOSER (964), E. Africa and Sao Thomé, *Cetoniide*, 11 spp. n. SHARP (969), Natal, *Cassida* sp. n. D'ORBIGNY (996), *Onthophagides*, 24 spp. n. D'ORBIGNY (997), W. Africa, *Onthophagides*, 12 spp. n. D'ORBIGNY (998), *Onthophagus*, 14 spp. n. PÉRINGUEY (1027), S. Africa, *Melolonthini* of, n. genn., n. spp. PÉRINGUEY (1028), S. Africa, about 200 spp. n., *Cicindelide*, *Carabide*, *Pausside*, *Staphylinide*, *Coprides*, *Ptinide*, *Tenebrionide*, *Cantharide*, *Lagride*. PÉRINGUEY (1029), Transvaal, *Dromica*, 2 spp. n., *Anomalipus*, 4 spp. n. PIC (1053), Abyssinia, Niger, *Anthicid.*, 2 spp. n. PIC (1055), Natal, *Mulacodermide* n. sp. PIC (1062), *Malacod.*, *Anobiid.*, *Anthicid.* spp. n. PIC (1064), Caffraria, *Malegia* sp. n. PIC (1066), Natal, *Malacodermid.*, 5 spp. n. PIC (1068), Dunbrody, *Malcod.*, *Notoxus*, *Salpingus* n. sp. PIC (1073), S. Africa, *Malacod.*, 5 spp. n., *Rhipiph.* g. n. PIC (1078), Somali, *Anthicus* n. sp. PREISS (1106), German E. Africa, *Cetoniide*, 6 spp. n. RAFFRAY (1114), *Pselaphide*, general work. RÉGIMBART (1125), W. Africa, *Dytiscide*, 2 spp. n., *Dineutes*, sp. n. REITTER (1154), E. Africa, blind Carabid, n. gen. SCHENKLING (1226), Somali land, *Phlocoprus* sp. n. THÉRY (1377), E. Africa, *Buprest.* sp. n. WASMANN (1481), *Pausside*, 6 spp. n. WASMANN (1484A), Congo, n. genn., n. spp., Myrmecophilous *Staphylinide*. WATERHOUSE (1491), *Buprestide*, 17 spp. n. WEISE (1503), *Chrysomelide*, incl. *Casside* and *Hispide*, 23 spp. n., n. g. WEISE (1504), *Hispide*, 2 spp. n. WEISE (1507), *Hispide*, 3 spp. n.
- Hymenoptera*. ANDRÉ (28), W. Africa, *Mutillide*, 11 spp. n. ASHMEAD (51), Liberia, *Curriea* sp. n. DU BUYSSON (217), *Chrysid.*, 5 spp. n. DU BUYSSON (219), Damara land, *Masaris* sp. n. CAMERON (223), S. Africa, *Vespide*, *Bracon.*, *Chalc.* sp. n. CAMERON (224), Cape Colony, *Fossoria*, *Proctotryp.*, *Ichneum.*, *Bracon.*, *Evaniid.*, *Cynip.* spp. n. CAMERON (225), *Thynnides*, *Ichneum.*, *Bracon.*, *Cynip.*, 20 spp. n., genn. n. CAMERON (237), S. Africa, *Pimplina* n. g. CAMERON (238), Uitenhage, *Apteropompilus* sp. n. ENDERLEIN (456), *Braunsia*, 9 spp. n. ENDERLEIN (457), Somali, n. g. *Rhopalosomide*. ENDERLEIN (465), Trop. Africa, *Ichneumonide*, 3 spp. n. FOREL (529), *Carebara* sp. n. FOREL (531), Natal, *Plagiolipsis* sp. n. FRIESE (544), *Anthidium* and *Serapis*, 8 spp. n. FRIESE (546), *Apide*, 10 spp. n. FRIESE (549), *Megachile*, 12 spp. n. FRIESE (551), *Celiowys* revision, spp. n. KONOW (838), *Arge*, 3 spp. n., *Distega* n. g. KIEFFER (793), *Proctotrypide* and *Evaniide* spp. n. KIEFFER (794), *Proctotrypide*, 17 spp. n. KIEFFER (795), *Oberthurella* n. sp. MORICE & SZÉPLIGETI (959), White Nile, *Aculeata*, 3 spp. n., *Iphiaulax* sp. n. MAYR (927), White Nile, *Formicid.*, 2 spp. n. MAYR (928), Cape, *Ponera* sp. n. MOCÁRY (952), S. Africa, *Chrysis*, 9 spp. n. SZÉPLIGETI (1367), *Braconide* n. spp. TULLGREN (1404), Cameroons, *Diploptera* and *Fossoria*, 19 spp. n. WASMANN (1484A), Congo, *Dorylus* n. sp.
- Lepidoptera*. AURIVILLIUS (60), Cameroons, spp. n., genn. n. AURIVILLIUS (61), *Acrea*, 3 n. spp., *Euryphe* and *Diestogyna*, 1 sp. n. AURIVILLIUS (62), *Bombyces*, 9 spp. n. AURIVILLIUS (63), White

- Nile list. AURIVILLIUS (64), Cameroons, *Papilio* n. sp. BETHUNE-BAKER (117), Sierra Leone, *Rhopalocera*, 15 spp. n. CATOR (250), Sierra Leone, *Lycenidae*, 4 spp. n. HEYN (685), E. Africa, *Ilema* n. sp. JORDAN (771), *Syntomid.*, 3 spp. n., *Phragmatobia* sp. n., *Agaristidae*, 4 spp. n., *Sindris* sp. n. NEAVE (977), Victoria Nyanza, *Rhopalocera*, with table of distribution and n. spp. REBEL (1121), German East Africa, *Saturniidae* sp. n. ROTHSCHILD (1195), *Sphingidae*, 5 spp. n. ROTHSCHILD (1196), Aruwimi For., *Melanitis* n. sp. SHARPE (1286), Equatorial Afr., *Rhopalocera*, 4 spp. n. SHARPE (1287), Africa equat., *Rhopalocera*, 6 spp. n. SHARPE (1288), Equat. Africa, *Lycenidae*, 5 spp. n. SUFFERT (1353), *Rhopalocera*, many spp. n. SUFFERT (1354), German E. Africa, *Rhopalocera*, 6 spp. n. SUFFERT (1355), E. Africa, *Alena* sp. n. SUFFERT (1355A), *Nymphalidae*, 4 spp. n. SWINHOE (1361), *Agaristidae*, *Lymantr.*, *Aganaiidae*, *Limacodidae*, *Margaronia* spp. n. SWINHOE (1362), Trop. Africa, *Geometridae*, list, many spp. n. SWINHOE (1363), W. Africa, *Euproctis* sp. n. THURAU (1386), E. Africa, n. g. *Noctuidae*. TRIMEN (1394), E. Africa, *Zerites*, *Lycæna* sp. n. WARREN (1475), *Drepan.*, *Thyrid.*, *Uran.*, *Geometr.* spp. n.
- Diptera.* BALFOUR (77A), Nile, *Culicidae*. BISCHOF (130), Algoa Bay, *Tachinidae*, 4 spp. n. BRUMPT (191), Centr. Africa, *Glossina* n. sp. GILES (603), Angola, *Culex* n. sp. GRÜNBERG (641), Cameroons, *Rhinoestrus* sp. n. THEOBALD (1373), Gambia, *Culicidae*, 6 spp. n. THEOBALD (1374), Senegal, *Culicidae* n. g. THEOBALD (1376), Egypt etc., *Culicidae*, 8 spp. n.
- Aphaniptera.* ROTHSCHILD (1191), Cape Colony, n. spp.
- Hemiptera.* BREDDIN & BÖRNER (173), Natal with Termites, n. sub-order.
- Hemiptera Heteroptera.* BERGROTH (102), Soudan, *Glypsus* n. sp. BERGROTH (103), Cameroons, *Reduviidae*, 3 spp. n. BERGROTH (104), Cameroons, *Megadæum* sp. n. DISTANT (385), Transvaal, *Macrocoris* n. sp. DISTANT (386), Old Calabar, *Chauliops*, Cape Colony, *Henicocephalus* sp. n. DISTANT (387), S. Africa n. genm., n. spp. DISTANT (390), Transvaal, *Heteroptera*, 14 spp. n., gen. n. DISTANT (391), W., E. and S. Africa, spp. n., *Coreidae*, *Pyrrhocoridae*, *Nepidae*. HORVÁTH (715), *Pentatomidae* spp. n., genm. n., St. Thomé Is. list. KIRKALDY (808), S. Africa, *Metrocoris* n. sp. REUTER (1166A), Abyssinia, *Capsidae*, 9 spp. n. REUTER (1168), Congo, *Capsidae*, 6 spp. n. SCHOUTEDEN (1235), *Pentatomidae*, 13 spp. n. SCHOUTEDEN (1237), Guinea, *Pentatomidae*, 8 spp. n. SCHOUTEDEN (1238), Trop. Africa, *Pentatomidae*, n. genm., n. spp. VARELA (1431), Guinea, *Reduviidae*, 8 spp. n. VARELA (1432), Cameroons, *Reduviidae*, 3 spp. n.
- Homoptera.* DISTANT (384), *Cicadidae*, 4 spp. n. DISTANT (393), *Cicadidae*, 4 spp. n. JACOBI (733), Somali Land, Soudan, *Homoptera*, 10 spp. n. JACOBI (735), E. Africa, *Locris*, sp. n. MELICHAR (937), Shoa, Galla and Somali, *Homoptera*, 30 spp. n. SCHMIDT (1229), Benue, *Flatid.* sp. n.
- Aphidae.* THEOBALD (1375), Sudan, *Aphis* sp. n.
- Trichoptera.* ULMER (1418), W. Africa, 3 spp. n., gen. n. ULMER (1419), Cameroons, 3 spp. n., n. g.
- Neuroptera.* WEELE (1501), W. Africa, *Cymothalis* sp. n.
- Termitidae.* SJÖSTEDT (1301), *Termitidae*, 19 spp. n. DESNEUX (369), Cameroons, *Termes* sp. n.
- Embiidae.* VERHOEFF (1434), Cameroons, *Embia* sp. n.
- Orthoptera.* ADELUNG (12), Abyssinia, *Blattidae*, 8 spp. n. BOLÍVAR (144), *Chrotogonine*, 9 spp. n. BOLÍVAR (145), *Petasia*, *Maura*, 5 spp. n. BOLÍVAR (146), *Pirgomorphidae*, 5 spp. n. BOLÍVAR (147), *Pœcilocerine* and *Pyrgomorphine* spp. n. BORG (155), Cameroons, *Blattidae*, 14 spp. n. BORG (156), Cameroons, *Forficulidae*, 9 spp. n. BURR

(201), *Forficulidæ* spp. n. BURR in DISTANT (382), S. Africa, *Bormansia* n. sp. KIRBY (804), *Mantidæ*, 5 spp. n., gen. n. REHN (1128), Zulu and Gaboon, 2 spp. n. REHN (1130), S. Africa and Mombasa, *Phasmidæ*. REHN (1133), W. Africa, *Acridiidae*, 3 spp. n.

5. MADAGASCAR, including ALDABRA ISLDS., etc.

Coleoptera. BEGUIN-BILLECOCQ (98), Madagascar and Mayotte, *Apion*, 8 spp. n. BERNHAUER (108), *Medon*, *Eulissus*, *Xantholinus*, *Pachycorinus*. BERNHAUER (109), *Eleusis*, *Osorius*. FAIRMAIRE (473), 125 spp. n., genn. n. FAIRMAIRE (477), *Cicindelidæ* 3, *Carabidæ* 2, spp. n. FAUVEL (485), *Staphylinidæ* n. spp. FAUVEL (491), *Staphylinidæ*, 54 spp. n. FLEUTIAUX (518), *Cardiophorus* sp. n. HORN (708), *Pogonostoma* sp. n. PIC (1053), *Anthicidæ*, 3 spp. n. PIC (1054), *Ptinus*, 2 spp. n. PIC (1056), *Salpingus*, *Hylophilus* spp. n. PIC (1092), *Xamerpus*, *Theca* sp. n. PIC (1068), *Bruchus*, *Malegia* sp. n. RAFFRAY (1114), *Pselaphidæ*, general work, n. g. SCHENKLING (1226), *Phlæocopus* sp. n.

Hymenoptera. BUYSSE (217), *Chrysid.*, 2 spp. n. FOREL (527), *Strumigenys* sp. n. KIEFFER (796), Mad., Nossi-Bé, Bourbon, *Chalcidinae* n. genn., n. spp. SZÉPLIGETI (1366), *Camarota* n. sp.

Lepidoptera. SWINHOE (1362), *Geometridæ*, 17 spp. n.

Diptera. DYÉ (443), *Anophelinæ*.

Hemiptera. DISTANT (384), *Cicada* sp. n. HORVÁTH (715), *Pentatomidæ*, 10 spp. n. SCHOUTEDEN (1238), *Scotinophara*.

Coccidæ. MARCHAL (909).

Termitidæ. SJÖSTEDT (1301), 5 spp. n.

Orthoptera. BOLÍVAR (146), *Phymateus*, 2 spp. n. BOLÍVAR (147), *Pyrgomorphinæ* spp. n. BURR (201), *Forficulidæ* spp. n.

6. TROPICAL and EASTERN ASIA, incl. JAPAN and TIBET.

For outskirts see also 3 (a.), (g.), (h.). Arabia, see 3 (h.).

Insecta. PAVIE (1011A), Fauna of Indo-China.

Coleoptera. ARROW (38), Penang, *Ochodeus* sp. n. AURIVILLIUS (57), Malacca, *Glenea* sp. n. BERNHAUER (108), Shanghai, *Eulissus* sp. n. BERNHAUER (109), Tonkin, *Lispius*, Annam, *Trogophilæus* spp. n. BOILEAU (141), Kashmir, *Dorcus* sp. n. BOILEAU (142), Madura, *Dorcus* sp. n. BOILEAU (143), India and Burma, *Lucanidæ*, 4 spp. n. BOUCOMONT (159), India, China, etc., *Enoplotrupes*, *Geotrupes*, 9 spp. n. BOURGEOIS (160), S. India and Ceylon, *Malacoderm.*, 5 spp. n. CAMERON, Perim Is. See Africa. FAUST (481), India, China, Japan, *Cleonides* spp. n. FAUVEL (482), India and Burma, *Staphylinidæ*, 27 spp. n. FAUVEL (485), India, Ceylon, etc., *Staphylinidæ* n. spp. GROUVELLE (640), Bangkok, *Heteroceris* n. sp. HAGEDORN (648), Darjiling, Japan, *Scolytidæ*, 5 spp. n. HORN (713), Ceylon, *Cicindelidæ* list, 3 spp. n. JACOBY (744), India, *Chrysomelidæ*, 43 spp. n. JACOBY (749), Tonkin, *Sagra* n. sp. JORDAN (767), Tonkin, 12 spp. n., Sikkim, 1 sp. n. JORDAN (772), Burma, *Anthrribidæ*, 2 spp. n. KOKUJEV (827), W. China, *Ichneumonidæ* spp. n. KOLBE (831), Tonkin, Perak, Andamans, *Valgidæ* n. g. LESNE (876), India, *Sinoxylon* n. sp. LEWIS (880), India, *Histeridæ*, 3 spp. n. MAINDRON (899), *Tricondyla* n. sp., *Crepidopterus* n. sp. MÖLLENKAMP (954), Himalaya, *Prosopocelus* sp. n. MOSER (965), Tonkin, Perak, Assam, *Vulgides* n. spp. OBERTHÜR (989), Darjeeling, *Sphingidæ* n. g. PETRI (1035), India, *Lixus*, 2 spp. n. PIC (1058), Japan, *Malachius*, 2 spp. n. PIC (1064), Tien-tsin, *Scaptia* sp. n. PIC (1065), Japan, *Dichelotarsus* sp. n. PIC (1069), Tonkin, *Laria* n. sp.

ORTEVIN (1100), Darjeeling, Mou-pin, *Silphidae*, 5 spp. n. RAFFRAY (1114), incl. India and Japan, *Pselaphidae*, general work. REITTER (1148), Japan, *Cionus* n. sp. REITTER, Afghanistan and Gobi: see Pal. Col. SCHWARZ (1266), Ceylon, *Adelocera* sp. n. SPAETH (1327), Burma, *Cassida* sp. n. THÉRY (1377), Mysore, *Buprest.* sp. n. THÉRY (1378), Ceylon, *Buprestides*, 14 spp. n. WASMANN (1481), India, *Paussidae*, 7 spp. n. WASMANN (1484A), Bombay, *Doryloxenus*, 2 spp. n., *Discoxenus* n. g. WATERHOUSE (1491), Tonkin, India, Andamans, *Buprestidae*, 5 spp. n. WEISE (1503), China, *Diorctus* sp. n. WEISE (1504), Tonkin, India, *Hispidae*, 2 spp. n. WEISE (1507), India, Ceylon, *Hispidae*, 3 spp. n. ZANG (1546), Assam, *Basilianus* sp. n.

Hymenoptera. ASHMEAD (46), Japan, Fossoria, *Bethylidae*, *Proct.*, *Cynip.*, *Chalc.* n. spp.; Formosa, *Eupelmus* n. sp. ASHMEAD (50), Ceylon, n. sp. *Alsiidae.* DU BUYSSON (218), China, Malacca, Andamans etc., *Vespa*, 5 spp. n. CAMERON (222), Singapore, *Piagetia*, *Icaria*, *Bracon.* spp. n. CAMERON (226), Khasia hills, *Cryptine*, 26 spp. n. CAMERON (227), Khasia hills, *Bembex* sp. n. CAMERON (229), Japan, *Dielis* and *Eumenes* n. sp. CAMERON (230), India, *Apidae*, *Vespidae*, *Fossor.*, *Ichn.*, *Chalcid.* CAMERON (231), *Odynerus* spp. n., *Epyris* and *Haliphera* sp. n., n. g. *Braconid.* CAMERON (232), N. India, *Apidae* spp. n., *Fossor.* spp. n., *Ichneumonidae* spp. n. CAMERON (233), N. India, n. spp. *Apidae*, *Mutillides*, *Fossor.*, *Ichneumonidae.* CAMERON (234), India, n. spp. *Braconidae*, *Fossoria*, *Vespidae*; Ceylon, *Megachile* n. sp. CAMERON (235), Deesa, *Juartinia* n. sp. CAMERON (236), India, *Athalia* n. sp. CAMERON (241), India, *Ichneumonidae*, 14 spp. n., genn. n. ENDERLEIN (456), Ceylon, *Braunsia* sp. n. FOREL (532), N. India, Kasmir, *Formicide*, 6 spp. n. FRIESE (548), Nicobars, *Megachile* sp. n. MOCSÁRY (953), *Siricide*, Japan, 1 sp. n., Tonkin, 4 spp. n. MOCSÁRY (951), Tonkin, *Clavellaria* sp. n. NURSE (985), India, *Apidae*, many n. spp. NURSE (986), India, *Chrysid.* 7 spp. n., *Fossoria*, 2 spp. n., *Eumenes* sp. n. KIEFFER (794), India, Burma, *Proctotryp.*, 3 spp. n. SCHULZ, India, 4 spp. *Crabro*, *Zeitschr.* Breslau xxix, p. 101.

Lepidoptera. BUSCK (206), China, *Coleophora* sp. n. DIETZE (380), Japan, *Eupithecia* sp. n. DRUCE (408), Malay States, *Lycenidae* list. DUDGEON (416), Sikkim and Bhutan, *Noctuidae*, Cat. DYAR (428), Japan, *Epipyrops* sp. n. EHRLMAN (447), Ceylon, *Ornithoptera* sp. n. FAWCETT (492), Sikkim, *Rhopalocera*, 10 spp. n. FRUHSTORFER (568), Malay states, *Felicota* n. sp. GREEN (621), Ceylon, *Danais alcippus*. HAMPTON (654), India, *Notodontidae*, 2 spp. n. HEYLAERTS (682), Tonkin, *Chalia* n. sp. MANDERS (900), Ceylon, *Rhopalocera*, distribution. MOORE (956), India, *Pieridae*, 1 sp. n. Baluchistan, *P. machaon*, NURSE, p. 723, J. Bombay Soc. xv. OBERTHÜR (988), Siao-Lou, *Rhagastis* sp. n. PÜNGELER (1110), Japan, *Noctuidae*, *Geometridae*, 4 spp. n. SWINHOE (1361), Singapore, *Bombyces*, 2 spp. n., Poona, *Thosae* sp. n. SWINHOE (1363), Khasia hills, *Scopelodes* sp. n., *Hypereschna* sp. n. SWINHOE (1364), Perak, *Ercheia*, sp. n. WARREN (1476), India, *Cryptoloba* sp. n., Tonkin, *Uliura* and *Ptychopoda* n. sp. YOUNG (1542), India, *Rhopalocera*, distribution.

Diptera. BEZZI (125), Ceylon, *Empidae*, 4 spp. n., India, Singapore, 3 spp. n., Indo-Australian *Empidae* list. COQUILLETT (314), India and Ceylon, *Acalyptrate*, 4 spp. n. GILES (601), India, *Corethra* n. sp. GILES (604), Himalaya, *Howardina* sp. n. JAMES & LISTON (760), India, *Anopheles*, with sp. n. KERTÉSZ (789), India, *Sapromyzides* n. g. MEIJERE (934), Darjiling, Ta-tsien-lu, n. spp. RICARDO (1172), Ceylon, *Udenocera* n. g. *Tabaninae.* SPEISER (1331), Burma, *Ornithomyia obscurata.* THEOBALD (1371), Malay States, *Culicidae* n. genn., n. spp.

Aphaniptera. ROTHSCHILD (1191), India, Japan n. spp.

Hemiptera. BREDDIN (167), *Chilocoris*, 2 spp. n. BREDDIN (168),

Tonkin, 11 spp. n., Sikkim, sp. n. *Pentatomidae*. DISTANT (383), India, Ceylon, Burma, *Reduviidae-Capsidae*. DISTANT (384), India and Pahang, *Cicadidae*, 8 spp. n. DISTANT (385), Ceylon, n. g. *Naucoridae*. DISTANT (386), India, *Glossopelta*, Ceylon, *Cercotmetus* n. sp. DISTANT (387), China, *Fulgentius* n. g. *Capsidae*, Singapore, *Mertila* n. g. DISTANT (392), Himalaya, Burma, *Anthocoridae*, 3 genn. n. DISTANT (393), Japan, China, Formosa, Laos, *Cicadidae* spp. n. HORVÁTH (714), Malacca, Burma, *Colobathristinae* n. spp. HORVÁTH (718), Japan, *Plea* n. sp., Ceylon, *Micronecta* n. sp. JAKOVLEV (756), Sé-Tschuen, *Geocoris* sp. n. KIRKALDY (813), India, Cochin China, *Notonectidae*, 2 spp. n. MARTIN (918), S. India, n. g. *Tesseratominae*. MATSUMURA (922), Japan, *Cercopidae*, 19 spp. n., *Cicada* sp. n. REUTER (1162), Setschuan, *Stenodema*, 3 spp. n. REUTER (1165), Corea, *Capsidae*, 2 spp. n. REUTER (1166B), China and Mou-Pin, *Capsidae* spp. n. SCHMIDT (1229), Ceylon, *Ormenis* sp. n. SCHOUTEDEN (1236), Hainan, India, *Scutellerides*, 2 spp. n. Ceylon, brief notes on fauna, *Spolia Zeylan.* i, pp. 114-116. *Coccidae*. GREEN (620), Ceylon, *Lecanium* n. spp. *Termitidae*. DESNEUX (369), Annam sp. n., Ceylon sp. n. DESNEUX (373), Kashmir, *Termopsis* n. sp. *Odonata*. FÖRSTER (536), Upper Malacca, Sikkim, 4 spp. n. WILLIAMSON (1531), Burma and Lower Siam, *Calopteryginae* list, 1 sp. n. WILLIAMSON (1532), Formosa, *Psolodesmus* sp. n. BOLÍVAR (144), India, *Chrotogonus* sp. n. BOLÍVAR (147), India, *Pæcilocerus* n. sp. BURR (201), India, Japan, China, Tibet etc., *Forficulidae* n. spp. HANCOCK (655), Ceylon, *Tettigidae* monograph, 9 spp. n. KIRBY (804), Nepal, Ceylon, *Mantidae*, 2 spp. n. KIRBY (805), *Phasmidae*, Tonkin, 6 spp. n., Singapore, Penang, 3 spp. n. KRAUSZE (843), Tonkin, *Phaneropteridae*, 2 spp. n. KRAUSZE (844), Tonkin, *Conocephalidae*, 2 spp. n. NAVÁS (975), Himalaya, *Blattidae*, *Mantidae*, *Aceridiid.*, 4 spp. n. REHN (1128), Lower Siam, *Blattidae*, 5 spp. n. REHN (1130), Siam, *Phasmidae*, Japan, n. spp. REHN (1133), Siam, *Scelimena*, Japan, *Erianthus* sp. n.

7. ASIATIC ARCHIPELAGO, including PAPUA. (For islands beyond Papua see 2. Insular.)

Insecta. DYAR, Philippines, notice of a general work of 1895 by ELERA; J. N. York Ent. Soc. xii, pp. 58, 59. *Coleoptera*. ARROW (38); Java *Ochodeus* n. sp. AURIVILLIUS (57); *Glenea* 7 spp. n. BERNHAUER (108); Mentawai, *Holusus*, Sumatra, *Pinophilus* sp. n. BERNHAUER (109); Nias Sumatra, *Lispinus Holusus*, Mentawai *Osorius*. BOILEAU (143); Sumatra, *Hemisodorcus* sp. n. FAUVEL (482); Java, Borneo, etc. *Museochara* n. sp. FAUVEL (485); *Staphylinidae* n. spp. FAUVEL (486); Sumatra, *Lyctus* n. sp. FAUVEL (490); New Guinea, *Staphylinidae*, 2 n. spp. GEBIEN (590); Borneo, *Phrugonius* n. sp., Java, *Spirocus* n. sp. HAGEDORN (650); Java, *Scolytoplastypus* sp. n. HAUSER (664); N. Guinea, *Vulgus* sp. n. HAUSER (665); Key islds., *Nemophas* n. sp. HORN (710); N. Guinea, *Cicindela* sp. n. JACOBY (743); New Guinea, *Chrysomelidae*, 54 spp. n. JORDAN (767); Sumatra, Borneo, Celebes, Philippines, *Anthrithidae* spp. n. JORDAN (772); Java, Celebes, New Guinea, Ternate, *Anthrithidae*, 14 spp. n. KOLBE (831); Sumatra and Borneo, *Valgidae* n. genn., n. spp. LEWIS (880), Borneo, *Niponius* sp. n.; Java, *Platysoma* n. sp. MÖLLENKAMP (954); Borneo and Sumatra, *Lucanidae*, 5 spp. n. MOSER (965); Borneo, Sumatra, *Valgides* spp. n. PETRI (1037); Borneo, Java, *Lixus* sp. n. PIC (1064); Sumatra, *Mesocolepus* sp. n. RAFFRAY (1114); *Pselaphidae*, general work. SÆETH (1327); Java, Sumatra, Mentawai, Borneo, *Cassididae*, 4 n. spp. WASMANN (1481); Java, *Paussus*, 2 spp. n. WEISE

(1504); Borneo, Celebes, Sumatra, New Guinea, *Hispidae* n. spp. ZANG (1545); Moluccas, *Passalidae* n. sp. ZANG (1546); Borneo, *Passalidae*, 2 genn. n.

Hymenoptera. ASHMEAD (44); Philippines, *Apidæ* n. spp., *Fossor.*, 2 spp. n., *Hedychrum* sp. n., *Telenomus* sp. n., *Braconidae* sp. n., *Ichn.* n. sp. ASHMEAD (47); Philippines, *Apidæ*, 2 spp. n., *Fossoria*, 7 spp. n., *Mutillidae*, 1 sp. n., *Bethylidae*, 3 spp. n., *Proctotrypidæ*, 1 sp. n., *Chalcid.*, 7 spp. n., *Evaniidae* sp. n., *Ichneumonidae*, 12 spp. n., *Braconidae*, 10 spp. n. ASHMEAD (48); Philippines, Catalogue with spp. n. ASHMEAD (53); Philippines, fig-insects, 2 spp. n. BUYSSON (217); Java, *Chrysis* n. sp. CAMERON (222); Ternate, *Bracon* n. sp. COCKERELL (282); Philippines, *Otenoplectra* sp. n. ENDERLEIN (456); *Braunsia*, 3 spp. n. FRIESE (541), Tenimber-Larat, *Vespidae* n. g. FRIESE (548), *Megachile* sp. n. FRIESE, Java, list, Allg. Zeitschr. Ent. pp. 138-140. KIEFFER (793), Java, *Evaniidae* spp. n. KIEFFER (794), Sumatra, New Guinea, Ternate, *Proctotryp.* 7 spp. n. KRIEGER (845), New Guinea, *Trichomma* sp. n. SAUSSURE (1218), Borneo, *Megischus* n. sp. SCHULZ (1255), New Guinea, short list, *Cælioxyx* sp. n. SZÉPLIGETI (1367), Celebes, New Guinea, *Braconidae* n. spp. TULLGREN (1405), Java, *Scolia*, 4 spp. n.

Lepidoptera. BETHUNE-BAKER (116), Brit. New Guinea, *Lycenidae*, *Erycinid.*, *Bombyc.* s. l., *Noctuid.*, many spp. n. BETHUNE-BAKER (118), Halmaheira, Borneo, *Arhopala*, 3 spp. n. DANNATT (351), Gilolo, *Delias* n. sp. H. H. DRUCE (407), Borneo and New Guinea, *Lycenidae*, 4 spp. n. FRUHSTORFER (566), Borneo, *Pseudamathusia* n. sp., New Guinea, *Dicallaneura* sp. n. FRUHSTORFER (567), Obi, *Euplæa* n. sp. FRUHSTORFER (569), Engano, *Rhopalocera* list. FRUHSTORFER (570), New Guinea, *Calliplæa* sp. n. FRUHSTORFER (571), Celebes, *Elymnias* n. sp. FRUHSTORFER, Soc. ent. xix, p. 138, New Guinea, *Tenaris* n. sp. JORDAN (771), New Guinea, *Heterusia* sp. n. LATHY (860), Gilolo, *Cyrestis* sp. n. MABILLE (898), New Guinea, 3 n. spp., Celebes, 1 n. sp. PIEPERS & SNELLEN (1084), Java, *Lithosiidae*, catalogue, 5 spp. n. PIEPERS & SNELLEN (1085), Java, *Syntomidae*, 1 sp. n. ROTHCHILD (1194), New Guinea, *Papilion.*, *Pier.*, *Erycin.*, *Nymphal.*, *Geometr.* spp. n. ROTHCHILD (1195), New Guinea, *Sphingidae*, 2 spp. n. ROTHCHILD (1197), New Guinea, *Abisara* sp. n. ROTHCHILD (1198), New Guinea, *Opodiphthera* n. sp. SHELFORD (1289), Borneo, *Rhopalocera* n. spp. SWINHÖE (1361), Borneo, many spp. n., Celebes, *Eupterote* sp. n., Fergusson isld. *Agonis* sp. n. SWINHÖE (1363), Philippines, *Eulype* sp. n. SWINHÖE (1364), 13 spp. n. THIEME (1381), Nias isld., *Stictoplæa* sp. n. SNELLEN (1428), Java, *Tineidae*, 3 spp. n. VAN DEVENTER (1429), Java, *Tineidae*, 166 spp. n. WARREN (1476), *Geometridæ*, 7 spp. n., *Thyrid.* 2 spp. n.

Diptera. BEZZI (125), New Guinea, *Empidæ* spp. n. GILES (603), Philippines, *Culicidae*, 8 spp. n. LUDLOW (891), Philippines, *Culicidae* sp. n. LUDLOW (892), Philippines, *Culicidae*, 2 spp. n. MEIJERE (934), Java, n. spp. MEIJERE (935), Aru and Halmaheira, *Halophilus* and *Pseudoformosia* n. sp. SPEISER (1328), New Guinea, *Olfersia*, 2 spp. n. SPEISER (1331), Java, Sumatra, New Guinea, *Hippoboscidae*, 3 spp. n. STEIN (1343), Java, *Anthomyiidae*, 10 spp. n.

Aphaniptera. ROTHCHILD (1191), New Guinea, n. sp. *Hemiptera*. BREDDIN (168), *Pentatomidae*, 10 spp. n. BREDDIN (169), Buru, *Plisthenes* n. sp. DISTANT (387), Ternate, *Capsidæ* n. sp. DISTANT (389), Borneo, *Coreidæ* n. g. DISTANT (393), Borneo, *Cicada* sp. n., Sumbawa, *Cryptotympana* sp. n. HORVÁTH (714), *Colobathristinæ* spp. n., genn. n. HORVÁTH (718), New Guinea, *Micronecta* sp. n. KIRKALDY (813), Sumatra and Celebes, *Notonectidae*, 2 spp. n. SCHMIDT (1228), Sumatra, *Flatides*, 16 spp. n., n. g. SCHMIDT (1229), *Flatides*, 8 n. spp.

Coccidæ. GREEN (622), Java, 4 spp. n.

Neuroptera. WEELE (1501), *Ascalaphidae*, 4 spp. n.
Odonata. MARTIN (919), Java, *Macromia* n. sp.
Orthoptera. BURR (210), Borneo, *Forficulidae* spp. n. CAUDELL (254), Philippines, *Forficulidae* sp. n. KIRBY (804), Lombok, *Humbertiella* sp. n. KIRBY (805), Borneo, *Necrosia* n. sp., New Guinea, *Eurycnema* n. sp. NAVÁS (975), Philippines, 4 spp. n. REHN (1130), Sumatra and Obi, *Phasmidae*. REHN (1133), Labuan, N. Borneo, *Erucius* and *Mazarredia* sp. n.

8. AUSTRALIA and TASMANIA. (For New Zealand see

2. Insular.)

Insecta. FROGGATT (562), *Micromus* n. sp., *Braconidae* n. sp., *Cynipidae* n. sp. GOUDIE & LEA, specially *Coleoptera*, Gippsland, pp. 51-56, Victorian Natural. xxi. KERSHAW, Victorian Natural. xx, pp. 122-125, Launching Place, short lists.

Coleoptera. BERNHAUER (108), *Oxytelus* n. spp., *Atheta* n. sp., *Zyras* n. sp. BLACKBURN (132), *Trox* revision, 6 spp. n. BLACKBURN (133), *Bolboceras* revision, spp. n. BLACKBURN (134), *Copridae* spp. n. FAUVEL (485), *Staphylinidae* n. spp. KERSHAW, Victorian Natural. xx, pp. 150, 151, Buffalo Mountains. LAMEERE (854), *Toxentes* sp. n. LEA (561), *Cuculionidae* n. g. LEA (863), Australia and Tasmania, *Cryptocephalidae* revision, many n. spp. LEA (862), *Curculionidae*, many spp. n. LEA (864), incl. Tasmania, *Staphyl.*, *Rhysod.*, *Cucuj.*, *Copr.*, *Rhipiph.*, *Oedemer.*, *Curcul.*, *Scolyt.*, *Chrysom.* n. spp. LEWIS (880), *Hister.* sp. n. OHAUS (990), *Anoplognathides* revision. PIC (1064), *Thaptor* n. sp. RAFFRAY (1114), Austr. and Tasm., *Pselaphidae*, general work. RAINBOW (1116), Sydney, *Stigmodera* and *Horistonotus* sp. n. SLOANE (1310), Tropical Australia, *Cicadelidae* 3, *Carabidae* 5, spp. n. SLOANE (1311), *Carabinae*, revision, n. spp.

Hymenoptera. CAMERON (240), *Pristaulacus* sp. n. COCKERELL (282), *Saropoda* sp. n., *Anthoglossa* sp. n. COCKERELL (283), *Halictinae*, revision, n. spp. ENDERLEIN (458), Adelaide, n. g. *Thynnidae*. KIEFFER (793), *Evanidae* sp. n. SZÉPLIGETI (1367), *Braconidae* n. sp.

Lepidoptera. FRUHSTORFER (565), Queensland, *Tachyris* sp. n. LOWER (888), incl. Tasmania, *Tineidae*, 33 spp. n. MABILLE (898), *Padraona*, *Ocybadistes* n. sp. MEYRICK (946), Australian *Gelechiidae*, 207 n. spp., 39 n. genn. TURNER (1408), *Notodontidae* and *Syntomidae*, 9 spp. n. TURNER (1409), *Geometridae*, revision. TURNER (1410), revision of *Thyrididae*, 1 sp. n., *Pyrulidae*, many spp. n. TURNER (1411), *Bombyces Noctuidae*, *Geometr.*, *Tineid.*, many spp. n. TURNER (1412), Austral. and Tasman., *Lymantriidae*, 4 spp. n. WARREN (1476), *Geometridae*, 3 spp. n., *Thyrid.*, 1 sp. n. WATERHOUSE (1493), *Hesperiidae*, erroneously listed. WATERHOUSE (1494), *Heteronympha* sp. n. WATERHOUSE & TURNER (1495), *Lycanidae*, doubtful species.

Diptera. BEZZI (125), *Empidae* spp. n. COQUILLET (314), W. Australia, *Tachina* n. sp. RAINBOW (1117), *Nycteribia* n. sp.

Aphaniptera. ROTHSCILD (1191), n. spp.

Hemiptera. BERGROTH (105), Queensland and Tasmania, *Morbora* 2 spp. n. DISTANT (384), *Cicadidae* sp. n. DISTANT (387), *Armachanus*, *Capsidae*, n. sp. DISTANT (388), North Queensland, *Heteroptera*, genn. n., spp. n. DISTANT (391), Queensland, *Mononyx* sp. n. DISTANT (393), *Cicadidae*, 3 spp. n. GODING & FROGGATT (613), Austral. and Tasman., monograph, *Cicadidae*, 119 species. KIRKALDY (813), *Anisops*, 3 spp. n. SCHMIDT (1229), Queensland, *Flatides*, 3 spp. n. SCHOUTEDEN (1236), N. S. Wales, *Philia* n. sp.

Coccidae. GREEN (625), *Chionaspis*, *Antonina* sp. n. GREEN (624), Victoria, 5 spp. n.

Neuroptera. KEMPNY (785), *Chrysopa* sp. n. FROGGATT (557), *Embiidae*, 2 spp. n., *Croce* n. sp. WEELE (1501), N. W. Austral., *Acanthaclysis* sp. n.

Orthoptera. BOLÍVAR (147), Sydney, *Monistria* n. sp. KIRBY (805), *Phasmide*, 2 spp. n. REHN (1128), 3 spp. n. TEPPER (1370), S. Australia, *Blattidae*, *Mantidae*, *Aceridiidae*, *Gryllacris* n. spp.

9. NORTH AMERICA. For Bahamas and Bermudas see

11. Antilles.

Insecta. The Insects of Alaska, MERRIAM and others (940). Canada, various notes, Ottawa Natural. xvii, pp. 216-220. BEUTENMÜLLER (119), New York Galls. CURRIE (333), Kootenay, collecting trip. GODMAN (614). SCHAEFFER, S. Texas, peculiarities, J. N. York ent. Soc. xii, pp. 63, 64. SNOW (1325), Arizona, Collector's list. HEIDEMANN and others, Plummer's isld. Maryland, P. ent. Soc. Washington vi, pp. 22, 23.

Coleoptera. BERNHAUER (109), Michigan, *Trogophlaeus* sp. n. BLANCHARD (135), California, *Dromaeolus* n. sp. BRUES (188), Texas, *Ecitopora* sp. n. CASEY (248), *Staphylinidae*, 2 n. genn., *Anthicidae* n. genn., *Curculionidae*, 3 spp. n. CHITTENDEN (263), *Sphenophorus*, 2 spp. n., and (264), 4 spp. n. CHITTENDEN (266), Arizona, *Latheticus* n. sp. CHITTENDEN (1498), Illinois, *Oberca* n. sp. COQUILLETT (317), Louisiana, *Culex* n. sp., Massachusetts, *Metriocnemus* n. sp., Canada, *Cuterebra* n. sp., *Bischopia* n. sp. DAVIS (353), New Jersey, *Neoclytus* sp. n. DURY Ohio, *Melasini*, 28 spp., Ent. News Philad. xv, p. 52. FELT & JOUTEL (495B), *Superda*, monograph, 1 sp. n. FUCHS, Tulare, trip, Ent. News Philad. xv, pp. 337-339. KNAUS, Sacramento Mts., list, Ent. News Philad. xv, pp. 152-157. LENG, N. Jersey, J. N. York ent. Soc. xii, p. 64. NEEDHAM, Beetle drift on Lake Michigan, Canad. Ent. xxxvi, pp. 294-296, and 335. PIC (1064), *Ptinus* sp. n. PIC (1068), *Ptinus*, 2 spp. n. PIERCE (1086), Nebraska, *Rhipiphorus*, *Myiodites*, *Stylops* n. spp. RAFFRAY (1114), *Pselaphidae*, general work. SCHAEFFER (1220), Rio Grande, Florida etc., n. spp., n. genn. SCHWARZ (1262), Los Angeles, *Pseudo-weisea* n. sp. SCHWARZ, Maryland, *Hormops*, P. ent. Soc. Washington vi, p. 11. SHERMAN, N. Carolina, *Cicindelidae*, Ent. News Philad. xv, pp. 26-32, 112. SKINNER (1302), Arizona, *Meloidae*, 3 spp. n. STEVENSON, Canada, *Aphodius erraticus*, Canad. Ent. xxxvi, p. 164.

Hymenoptera. ASHMEAD (42), *Siricidae*, 4 spp. n. ASHMEAD (52), Utah, *Torymus* sp. n. BRADLEY (164), Oregon and Colorado, *Cratichneumon*, 2 spp. n. BRUES (190), *Proctotrypidae*, 3 spp. n. BUYSSON (217), California, *Chrysis* n. sp. CAMERON (228), "N. Mexico," *Nysson* sp. n. COCKERELL (280), *Epeolus*, 6 spp. n. COCKERELL (281), New Mexico, Colorado, *Apidae*, 5 spp. n. COCKERELL (284), California, *Anthophora* sp. n. COCKERELL (286), New Mexico, *Apidae*, 3 spp. n. COCKERELL (289), New Mexico, *Apidae*, 3 spp. n. COCKERELL (291), Southern U. S., *Apidae* spp. n. COCKERELL (292), Colorado, *Nomada*, 13 spp. n. COCKERELL (293), S. California, *Apidae*, sp. n. COCKERELL, New Mexico, bees, Ent. News Philad. xv, p. 171. CRAWFORD (327), New Jersey, *Halictus*, 2 spp. n. FELT (495A), New York and Colorado, *Ophionini*, 4 spp. n. FOREL (529), British Columbia, *Formicidae* varr. n. FOREL (530), Texas, *Acanthostichus* sp. n. FYLES (574), Quebec, *Torymus* n. sp. FYLES (575), *Amesolytus* sp. n. GRAENICHER (619), Wisconsin, *Andrena*, 3 spp. n. KIEFFER (793), *Proctotrypidae* and *Evaniidae* spp. n. KONOW (838), Texas, *Peridista* n. sp. ROBERTSON (1182), *Apidae*, 3 spp. n. SWENK (1358), Nebraska, *Colletes* sp. n. TITUS (1389), Illinois, n. g. *Osmiinae*. TITUS (1390), *Osmiinae*, 7 spp. n. VACHAL (1424), *Halictus*, 14 spp. n. VIERECK

(1445), *Odontophotopsis*, 11 spp. n. VIERECK (1446), *Fossoria*, 10 spp. n. VIERECK (1447), *Parnopes*, 7 spp. n. VIERECK (1448), New Jersey, *Perdita*, 2 spp. n. VIERECK (1449), Arizona, *Tachysphex* n. sp. VIERECK (1450), Delaware, *Apidae* n. g. VIERECK (1451), Nevada, *Apidae* n. g. VIERECK (1452), Wisconsin, *Habrocryptus* sp. n. VIERECK (1453), Pennsylvania, *Ammoplanus* sp. n. VIERECK and others (1454), Oregon, British Columbia etc., *Apidae*, synopsis with spp. n. VIERECK & COCKERELL (1455), New Mexico, *Philanthide*, 3 spp. n. VIERECK, Vancouver, *Thyreopus latipes*, Canad. Ent. xxxvi, p. 51. WHEELER (1518), Utah and Colorado, *Formicidae*, 4 spp. n. WHEELER (1519), Texas, *Colobopsis* n. sp. WHEELER (1520), Catalina isld., 8 spp. WHEELER (1521), North Carolina, 61 spp. WHEELER (1522), Colorado, *Formica* n. sp.

Lepidoptera. Distribution of *Sphingidae*, WEBSTER (1500).

ANDERSON (26), British Columbia, catalogue. ASHMEAD (45), New York, *Thymaris* sp. n. BARNES (88), chiefly Texas and Arizona, many spp. n. BRIMLEY, N. Carolina, *Sphingidae*, *Saturn.*, *Ceratocamp.*, Ent. News Philad. xv, pp. 120-126. BUSCK (203), British Columbia, *Tineidae*, 34 spp. n., n. g. BUSCK (204), Arizona, *Tineidae* n. g. BUSCK (205), Colorado, *Ethmia* sp. n. DOD, Alberta, list (continued from 1901) Canad. Ent. xxxvi, pp. 345-355. DOLL, Brownsville, short list, J. N. York ent. Soc. xii, pp. 126, 127. DYAR (420), British Columbia, long catalogue, 14 spp. n. DYAR (422), *Rhopalocera*, *Bombyc.*, *Noct.* n. spp. DYAR (424), United States, *Pyrallidae*, 9 spp. n. DYAR (427), British Columbia, *Diacrisia* sp. n. DYAR (430), *Tortricidae* n. g. DYAR (431), *Noctuidae*, *Notodontidae*, 5 spp. n. DYAR (432), *Sesiidae*, *Cochliidiidae*, *Noctuidae*, *Geometridae*, *Pyrallidae*. DYAR (433), Mackenzie, *Oeneis* n. sp. DYAR (435), *Illice*, 4 spp. n. DYAR (436), North Carolina, *Lactilia* n. sp. DYAR (437), Rhode isld., *Ancyliis* n. sp. DYAR (438), *Scoparia*, 4 spp. n. DYAR (439), British Columbia, *Noctuidae*, 8 spp. n. FERNALD (497), Ohio, n. g. *Choreutinae*. FIELD, New Hampshire, *Eurema lisa*, Psyche xi, p. 102. FLETCHER (515), Canada, *Phyciodes*, *Thecla*, *Pamphila* sp. n. FLETCHER (516), Canada, *Rhopalocera*, 3 spp. n. FYLES (576), Quebec, *Trichotaphe* n. sp. GIBSON, Meech Lake, Quebec, Ottawa Natural. xvii, pp. 204-206. GRINNELL (634), California, *Thanaos* sp. n. HEATH, Manitoba, supplementary list, Canad. Ent. xxxvi, pp. 269-272. KEARFOTT (776), British Columbia, *Tortricidae*, 7 spp. n. KEARFOTT (777), Assinaboia, *Proteopteryx* sp. n. NEWCOMB, Michigan, *Rhopalocera* in 1903, Ent. News Philad. xv, pp. 204-206. NEWCOMB, Michigan, *Cocytius cluentius*, Ent. News Philad. xv, p. 345. SKINNER (1303), Brit. Columbia, *Thecla* sp. n. SMITH (1313), *Noctuidae*, Calgary, 7 spp. n. SMITH (1314), U. S., Canada etc., *Noctuidae*, 12 spp. n., n. g. TAYLOR (1369), Vancouver, *Ennominae* n. g. WARREN (1474), Colorado, *Lampropteryx* and *Curipeta* n. spp. WARREN (1477), Colorado, Oregon, *Geometridae*, 7 spp. n.

Diptera. ADAMS (2), 27 spp. n. ADAMS (9), Colorado and Texas *Siphonella*, 2 spp. n. BACK (73), *Asilidae*, 6 spp. n. BEZZI (128), *Dipterous* galls in N. America, historical, statistical. BRIMLEY & SHERMAN, List of the *Tabanidae* (Horse-flies) of North Carolina, Ent. News Philad. xv, pp. 270-275, correction, t. c. p. 302. BRITTON (183), Connecticut, *Culicidae*. COCKERELL (287), Colorado and New Mexico, *Cecid.*, 3 spp. n. COQUILLETT (313), Georgia, *Chlorops* n. sp. COQUILLETT (315), 52 spp. n., n. genn. COQUILLETT (316), New Jersey, *Culex* sp. n. COQUILLETT (318), Southern Texas, 9 spp. n. DYAR (426), *Culex* n. sp. DYAR (429), British Columbia, *Culicidae*. FELT (495), N. York, *Culicidae*, 9 spp. n. FELT & YOUNG (496), United States, *Culex*, 4 spp. n. GILLETTE (605), Colorado, *Pegomyia* n. sp. GROSSBECK (637), New Jersey, *Culex* sp. n. GROSSBECK (638), New Jersey, *Culex*, 2 spp. n. HERRICK, *Grabhamia jamaicensis*, Ent. News Philad. xv, p. 81. HINE (688), British

Columbia, list with 2 spp. n.; OSBURN (1003), British Columbia, *Syrphidae* list. HINE (689), N. Carolina, *Chrysops*, 2 spp. n. HINE (690), Texas and Louisiana, *Ephydridae*, 2 spp. n. HINE (691), *Tabanidae*, 7 n. spp. JOHNSON (765), U. S. and Canada, 4 spp. n. JOHNSON, supplementary list of the *Diptera* of New Jersey, Ent. News Philad. xv, pp. 157-163.

MELANDER (936), *Stratiomyidae* list with *Macrosargus* sp. n. McCracken (931), California, *Anopheles* sp. n. SLINGERLAND & JOHNSON (1309), California, *Cecidomyia* n. sp. STEIN (1342), U. S. incl. Sitka, *Anthomyiidae* n. spp. WHITNEY (1525), *Tabanidae*, 4 spp. n.

Aphaniptera. BAKER (76), spp. n. ROTHSCHILD (1191), Brit. Columbia, Canada, 5 spp. n.

Hemiptera. ASHMEAD (54), Alaska, *Jassidae*, 3 spp. n., *Psyllidae*, 4 spp. n. BUENO (197), New York, *Heteroptera*, list. BUENO, Brit. Columbia,

Notonecta lutea, Ent. News Philad. 1904, p. 220. BUENO, *Notonecta lutea*, Ent. News Philad. p. 220. BUENO, North American *Notonecta*, p. 62, J. N. York ent. Soc. xii. HEIDEMANN (670), *Aradidae*, 2 spp. n.

HEIDEMANN (671), *Aradidae*, 3 spp. n. HEIDEMANN, North Carolina, *Schumannia*, P. ent. Soc. Washington vi, p. 12. OSBORN, Ohio Natural. iv, pp. 99-103; a further contribution to the Hemipterous fauna of Ohio.

SCHOUTEDEN (1236), Colorado, n. g. *Scutellerides*. SCHWARZ (1263), *Psyllidae*, 7 spp. n. SWEZEY (1360), *Fulgoridae*, catalogue. UHLER (1416), Las Vegas, 8 spp. n. *Lygaeidae*, *Capsidae*, *Ceratocombidae*. VAN DUZEE (1430), *Pentatomidae*, Cat., 12 spp. n., n. g. WIRTNER (1535), Pennsylvania, Catalogue.

Aphidae. COCKERELL (288), New Mexico, *Cladobius* sp. n. PERGANDE (1023), *Phylloxera*, many spp. n. PERGANDE (1024), U. S., *Macrosiphum* n. sp.

Aleyrodidae. BEMIS (99), California, *Aleyrodidae*, 19 spp. n.

Coccidae. SANDERS (1207), Ohio, 3 spp. n. SANDERS (1208), Ohio, monograph.

Neuroptera. BANKS (87), *Neuropt.* except *Odonata*, n. spp. *Psocidae* and *Trichoptera*. BANKS (85), British Columbia, *Trichoptera*, 2 spp. n.

BANKS (84), Washington, *Hydroptilidae*, 2 spp. n. BANKS (82), New Mexico, *Trichoptera*, 7 spp. n. CURRIE (334), Arizona and California, *Hemerobius*, 2 spp. n. CURRIE (335), Kootenay, *Hemerobiidae*, 5 spp. n.

BANKS (82), New Mexico, *Hemerobius* sp. n., *Brachynemurus* sp. n. BANKS (81), *Hemerobius*, 5 spp. n. BANKS (82), New Mexico, *Psocus* sp. n. BANKS (82), N. Mexico, *Perlidae*, 2 spp. n.

Odonata. BRIMLEY & SHERMAN, N. Carolina, list, Ent. News Philad. xv, pp. 100-102. WILLIAMSON, West Pennsylvania, additions, Ent. News Philad. xv, pp. 277, 278.

Thysanoptera. DANIEL (350), California, 4 spp. n.

Orthoptera. BRITTON, New England, *Eritettix* and *Conocephalus*, Psyche xi, p. 23. BRUNER (195), Colorado. CAUDELL (251), Florida and Galveston, *Phasmidae*, 2 novelties. CAUDELL, British Columbia, list and notes, Ent. News Philad. xvi, pp. 62, 63. CAUDELL, Assiniboia, short list, Canad. Ent. xxxvi, p. 248. GILLETTE (606), Colorado, list. BRUNER (605), Colorado, n. spp. MEAD, Ohio Natural. iv, pp. 109-112; a list of the *Orthoptera* of Ohio. MORSE (962), Southeast. U. S., *Acridiidae*, 14 spp. n. REHN (1132), New Mexico etc., *Acridiidae*, 2 spp. n., *Locustidae* sp. n. REHN & HEBARD (1134), Georgia and Florida, *Ceuthophilus* sp. n. REHN (1135), Texas, *Kakerlac* sp. n. REHN (1138), S. Carolina, *Chorisoneura* n. sp. REHN (1137), New Jersey, *Melanoplus* sp. n. REHN (1139), *Stenopelmastinae*, 2 spp. n. REHN, notes on the *Orthoptera* of the Keweenaw Bay region of Baraga County, Michigan, Ent. News Philad. xv, pp. 229-237, 263-269. REHN, notes and records of New Jersey *Orthoptera*, Ent. News Philad. xv, pp. 325-332. SCUDDER & COCKERELL (1267), New Mexico, *Blattidae*, *Phasmid.*

Acrid., *Locust.*, *Gryll.*, spp. n. WALKER (1465), Ontario, *Gryllidæ*,
2 spp. n. WALKER (1466), Ontario, *Locustidæ*, annotated list.

10. CENTRAL AMERICA (MEXICO to PANAMA incl.).

Insecta. GODMAN (614).

Coleoptera. BATES (92), Costa Rica, *Plusiotis* n. sp. BERNHAUER
(108), *Eleusis*, *Xantholinus* sp. n. CASEY (248), Mexico, *Dinocleus* sp. n.,
Anthicid. n. sp. JACOBY (748), Mexico, Costa Rica, Panama, *Halticinae*,
6 spp. n. JACOBY (748), Costa Rica, *Chlamys* n. sp. JACOBY (749),
Mexico, *Chlamys* n. sp. JORDAN (769), Mexico, Costa Rica, Nicaragua,
Anthrribidæ spp. n. LAMEERE (854), Mexico, *Callipogon* sp. n. OHAUS
(991), Costa Rica, *Anoplognathides*, 2 spp. n. PIC (1052), Mexico,
Cathorama sp. n. PIC (1064), Mexico, *Ptinidæ*, 2 spp. n. PORTEVIN
(1100), Mexico, *Silphidæ*, novelties. RAFFRAY (1114), *Pselaphidæ*,
general work. SCHAEFFER (1220), Rio Grande and Lower California,
n. spp. STERNBERG (1344), Panama, *Aegopsis* sp. n. WATERHOUSE
(1491), Mexico, *Polycesta*, 2 spp. n. WEISE (1503), Costa Rica, *Cassi-*
didæ, 2 spp. n. WEISE (1504), Panama, Mexico, *Hispidæ*, 2 spp. n.

Hymenoptera. BUYSSON (217), Mexico, *Parnopes* n. sp. CAMERON
(228), Panama, n. g. *Masaridæ*, *Paratiphia* sp. n., *Polistomorpha* sp. n.
COCKERELL (280), Vera Cruz, *Tripeolus* sp. n. COCKERELL (281),
Mexico, *Xylocopa* sp. n. COCKERELL (282), Mexico, *Macrotera* n. sp.
COCKERELL (286), Mexico, *Trypetes carinatum*. FRIESE (550), Costa
Rica, *Centris* n. sp. FOREL (526), Costa Rica, *Azteca* n. sp. KIEFFER
(793), *Proctotrypidæ* n. sp. KIEFFER (794), Nicaragua, *Proctotrypidæ*,
4 spp. n. KONOW (838), Costa Rica, Mexico, *Labidarge*, *Ptilia*,
4 spp. n. SWENK (1357), Costa Rica, *Colletes*, 2 spp. n. SZÉPLIGETI
(1366), Mexico, *Trogus* n. sp. TITUS (1389), Costa Rica, *Heriades*
sp. n. VACHAL (1424), Mexico, *Halictus*, 26 spp. n. VACHAL (1426),
Halictus n. sp.

Lepidoptera. DOGNIN (398), Costa Rica, San Salvador, *Notodontidæ*,
2 spp. n., *Eugiviria* sp. n., *Coptotelia* sp. n. DRUCE (406), Yucatan,
Adelocephala sp. n., Costa Rica, *Maschane* sp. n. DYAR (422), Mexico,
Apatelodes n. sp. DYAR (431), Mexico, *Afilia* n. sp. MABILLE (898),
Chiriqui, *Thracides* n. sp. SCHAU (1225), *Syntomidæ*, *Notodontidæ*,
Noctuidæ, *Chrysauginæ* spp. n. WARREN (1474), Mexico, Costa Rica,
Geometridæ n. sp. WARREN (1477), Mexico, Costa Rica.

Diptera. COQUILLETT (313), Nicaragua, Guatemala, Mexico, 17 spp. n.
COQUILLETT (315), Mexico, Nicaragua and Panama, 5 spp. n. COQUILLETT
(317), Mexico, *Conchyliaastes* n. sp. HINE (691), Mexico, *Tabanus*,
2 spp. n. RICARDO (1172), British Honduras, *Dichelacera* n. sp.
SPEISER (1328), Honduras, *Ornithopertha* n. sp.

Hemiptera. BREDDIN (166), Guatemala, *Lycambes* n. sp. BREDDIN
(171), *Podisus* n. sp. DISTANT (393), *Cicadidæ* n. g. SCHMIDT (1229),
Panama, *Ormenis* n. sp.

Termitidæ. DESNEUX (372), Mexico, *Termes* sp. n.

Mallophaga. CARRIKER (247), Costa Rica, 35 spp. n.

Odonata. CALVERT (220), Costa Rica, *Thaumatoneura* sp. n.

Orthoptera. BURR (201), Mexico, *Sparatta*, *Carcinophora* sp. n.
REHN (1129), Mexico and Costa Rica, 4 spp. n. REHN (1130), Costa
Rica, Nicaragua, *Phasmidæ* n. spp. REHN (1131), Mexico, *Phasmidæ*,
Arsid., *Locust.*, *Gryll.* n. spp. REHN (1136), Nicaragua, *Stagmatoptera*
sp. n. SCUDDER & COCKERELL (1267), Mexico, *Aeloplus* sp. n.

11. ANTILLES, including BERMUDAS, BAHAMAS, BARBADOS.

Insecta. CLARK (278), GODMAN (614). West India *Col.* and *Hemiptera*, UHLER, SCHWARZ and others, pp. 42-46, P. ent. Soc. Washington vi.

Coleoptera. ARROW (39), Jamaica, St. Vincent etc., *Chærostus* 2 spp. n. BERNHAUER (108), St. Thomas, *Leptacinus* n. sp. BERNHAUER (109), St. Thomas, *Osorius* sp. n., Grenada, *Trogophlæus* sp. n. FAUVEL (485), St. Domingo, *Oxytelus* n. sp. LAMEERE (854), Porto Rico, *Callipogon* sp. n. RAFFRAY (1114), *Pselaphide*, general work. WATERHOUSE (1491), Jamaica, St. Domingo, *Polycesta*, 2 spp. n.

Lepidoptera. HAMPSON (653), Bahamas, *Phalœne* spp. n., gen. n. LATHY (861), Dominica, list, 3 spp. n. SCHAUS (1225), Cuba, *Syntomide*, *Arctide*, *Hipside*, *Megalopygide*, *Notodontide*, Jamaica, *Hyppena* sp. n., Grenada, *Anisothrix* sp. n. WARREN (1474), Jamaica, *Geometride* n. spp. WARREN (1477).

Diptera. ADAMS (9), Grenada, *Siphonella* sp. n. GILES (604), Antigua, *Culicidæ*, 3 spp. n. JOHNSON, C. W., A revised list of the *Diptera* of Bermuda, 50 spp., Psyche xi, pp. 76-80. PAZOS, J.-H., Liste de moustiques de Cuba, Bull. Soc. ent. France 1904, p. 134.

Hemiptera. DISTANT (391), Grenada and St. Vincent, *Capsidæ*, 3 spp. n.

Orthoptera. BURR (201), Granada, *Diplatys*, Martinique, *Carcinophora* sp. n. REHN (1130), Swan island and Porto Rico, *Phasmidæ*, 2 spp. n.

12. SOUTH AMERICA, including TRINIDAD.

Insecta. BRÈTHES (175), Tucuman, *Cyclocephala*, 2 spp. n., *Iphiaulax* sp. n., *Asilidæ*, *Syrphidæ* and *Euxestu* n. spp., *Jassus* n. sp. GODMAN (614). Falkland Islands, see Insular, VALLENTIN.

Coleoptera. ARROW (38), Colombia, Patagonia, *Ægidium*, *Ochodæus*, 4 spp. n. AURIVILLIUS (58), Bolivia and Argentina, *Cerambycidæ*, 4 spp. n. BATES (92), *Pelidnotinæ*, revision, n. spp. BERNHAUER (108), *Staphylinidæ*, 12 spp. n. BERNHAUER (109), Brazil, *Trogophlæus*, 2 spp. n. BOILEAU (143), *Sphenognathus* 2 spp. n. BOURGEOIS (161), *Malacodermidæ*, 3 spp. n. FAIRMAIRE (476), *Cladotoma* sp. n., *Tenebrionidæ*, 7 spp. n., n. g. FAIRMAIRE (478), Brazil, *Cladotoma*, 2 spp. n., *Anchelmus* sp. n. FAUVEL (485), *Oxytelus* n. spp. FAUVEL (488), Brazil, *Staphylinidæ* genn. and spp. n. FAUVEL, Rev. Ent. franc. 1904, p. 140, *Luciola*, 2 spp. HAGEDORN (651) *Coccotrypes* sp. n. HELLER (675), Brazil, *Zygopidæ*, 4 spp. n. JACOBY (742), Bolivia and Argentina, *Chrysomelidæ*, 9 spp. n. JACOBY (746), *Halticidæ*, 27 spp. n. JACOBY (747), *Mastotethus*, 10 spp. n. JACOBY (748), *Chlamys*, 7 spp. n. JACOBY (749), Venezuela, *Chlamys* n. sp. JORDAN (769), *Anthrribidæ*, many spp. n. and genn. n. LAMEERE (854), Peru, *Callipogon* sp. n. LEWIS (880), *Histeridæ*, 6 spp. n., gen. n. OHAUS (991), *Anoplognathidæ*, 23 spp. n. PIC (1052), *Cathoroma*, 9 spp. n. PIC (1053), Guiana, *Anthicus* n. sp. PIC (1054), Peru, *Notoxus* n. sp. PIC (1057), Buenos Ayres, *Anthicus* n. sp. PIC (1064), Peru, Chili etc., *Ptinidæ*, 8 spp. n. PIC (1066), Brazil, *Malacoderm.* 2 spp. n. PIC (1067), Brazil, *Eupactus*, 6 spp. n. PIC (1070), Brazil, *Anthicus*, 6 spp. n. PORTEVIN (1100), Guiana, *Dissochaetus* sp. n. RAFFRAY (1114), *Pselaphidæ*, general work. RÉGIMBART (1124), Venezuela and Guiana, *Dytiscidæ*, 2 spp. n., *Gyrinidæ* sp. n. SCHWARZ (1265), *Elateridæ*, 40 spp. n. STERNBERG (1344), *Ægopsis* 4 spp. n. THÉRY (1377), Peru, *Buprest.* sp. n. WATERHOUSE (1491), Brazil, *Acherusia*, 2 spp. n. WEISE (1503), *Cassididæ*, 3 spp. n. ADAMS (10), *Chlorops*, 5 spp. n. WEISE (1504), *Hispidæ*, many spp. n. WEISE (1507), *Cassididæ*, *Hispidæ*, 14 spp. n., gen. n.

Hymenoptera. ANDRÉ (29), Chile, *Mutillidæ*, *Thynnidæ*, 5 spp. n. ASHMEAD (41), *Chalcididæ* of S. America, Catalogue, many genn. n. and

- spp. n. BRÈTHES (176), Brazil, 1 sp. n., Argentina list. BRÈTHES (177), Argentina, *Meteorus* n. sp. BRÈTHES (178), La Plata, monograph of *Eumenidae*, many spp. n. BRÈTHES (179), Patagonia, *Anthidium* sp. n. BRÈTHES (180), Argentina, *Trimeria* sp. n. BRÈTHES (181), Buenos Aires, *Oxybelus* n. sp. DU BUYSSON (217), *Chrysid.*, 5 spp. n. DU BUYSSON (219), *Parachartergus* sp. n., *Sapyga* sp. n. CRAWFORD (326), Bolivia, *Diphaglossa* sp. n. DUCKE (411), social *Vespidæ* n. spp. DUCKE (412), Parà, *Chrysid.*, with *Chrysogona* sp. n. DUCKE (413), Brazil, *Sphegides*, 5 spp. n. DUCKE (414), Lower Amazons, *Eumenidae*, 6 spp. n. DUCKE (415), Amazons, *Centris*, 2 spp. n. FOREL (526), Peru and Amazons, *Formicidæ*, 14 n. spp., Chile, 2 spp. n. FOREL (528), Patagonia, Chile, 3 spp. n. FOREL (530), *Formicidæ*, 4 spp. n. FOREL (532), Brazil, *Formicidæ*, 5 spp. n. FOREL (532), Chile, *Tapinoma* n. sp. FRIESE (542), S. Am. incl. of Chile, *Caupolicana* and *Ptiloglossa* n. spp. FRIESE (543), Brazil and Ecuador, *Ancyloscelis*, 3 spp. n. FRIESE (545), Chile, Peru, Ecuador, *Apidæ*, 10 spp. n. FRIESE (547), Chile, *Anthidium* sp. n. FRIESE (550), Brazil and Chili, *Centris*, 2 spp. n. HOLMBERG (697), *Apidæ*, *Fossoria*, many spp. n., genn. n., *Tenthredinidæ* list. KIEFFER (793), *Proctotrypidæ* and *Evaniidæ* spp. n. KIEFFER (794), incl. Patagonia, *Proctotrypidæ*, 8 spp. n. KIEFFER (796), Chile, *Pseudochalcura* n. sp. KIEFFER (797), Chile, *Cynipidæ* n. g. KIEFFER (798), Chile, *Proctotrypides*, 3 spp. n. KONOW (838), 7 spp. n., *Labidarge* and *Waldheimia*. PORTER (1099), Chile, *Vespidæ* list. SCHROTTKY (1245), Paraguay, Census, 1 n. sp., *Apidæ*. SCHULTHESS-RECHBERG (1246), *Nortonia*, 4 spp. n. SCHULTZ (1253), Amazons, *Aculeata*, 3 spp. n. SZÉPLIGETI (1365), *Braconidae*, many spp. n. SZÉPLIGETI (1366), Peru, *Iphiaulax* n. sp. SZÉPLIGETI (1367), *Braconidae* n. sp. VACHAL (1424), S. Am., incl. Chili, *Halictus*, 5 spp. n. VACHAL (1425), Tucuman, *Apidæ*, 62 spp., 39 spp. n. VACHAL (1426), *Halictus* n. spp. VACHAL (1427), Ecuador, *Halictus*, 3 spp. n., *Sphecodes* sp. n.
- Lepidoptera*. DANNANT (351), Venezuela, *Chlorippe*, Guiana, *Monethe* n. sp. DOGNIN (398), Northern S. Am., *Ischnocampa* sp. n., *Notodontidæ*, 6 spp. n., *Geometridæ*, 8 spp. n., *Eugiviria*, sp. n., *Pyralidæ*, 22 spp. n., *Tortricidæ*, 4 spp. n., *Cryptolechia* sp. n. DOGNIN (399), *Geometridæ* and *Lithosiidæ*, 23 spp. n. DOGNIN (400, 401), Peru, *Anaxita* sp. n. DRUCE (405), *Erycinidæ*, 23 spp. n. DRUCE (406), Tropical S. Amer., *Syntomidæ*, *Arctiidæ*, *Ceratocampidæ*, *Saturniidæ*, *Lasiolepididæ*, *Bombycidæ*, *Notodontidæ* spp. n. EHRMAN (447), Venezuela, *Papilio* sp. n. GUPPY, P. Inst. Trinidad, pt. 3, p. 167, Trinidad, *Metamorpho dido*, etc. JOANNIS (763), Organ mountains, *Lycomorphodes* and *Eriopyga* sp. n. KAYE (775), Trinidad, *Rhopalocera* catalogue, 289 spp., 10 spp. n. LATHY (859), *Erycinidæ*, 10 spp. n. MABILLE (898), *Hesperidæ*, 9 spp. n. OBERTHÜR (989), Bolivia, *Sphingidæ* sp. n. RÖBER (1179), Peru, *Mechanitis* n. sp., *Lymnas* n. sp. RÖBER (1180), Colombia and Ecuador, *Caligo*, 3 spp. n. ROTHSCHILD (1195), Peru, *Sphingidæ*, 3 spp. n. ROTHSCHILD, W. (1198), Tucuman, *Rothschildia* n. sp. SANDERS (1206), Brazil, Burchells 1825-1830, *Rhopalocera*. SCHAUS (1225), *Syntomidæ*, *Arctiidæ*, *Megalopygidæ*, *Liparidæ*, *Lasiolepididæ*, *Saturniidæ*, *Ceratocampidæ*, *Perophoridae*, *Cossidæ*, *Notodontidæ*, *Noctuidæ*, *Chrysangiuæ*. STICHEL (1348), *Narope*, 2 spp. n., *Culigo* n. sp. THIEME (1379), Andes, *Rhopalocera*, 4 spp. n. THIEME (1380), Ecuador, Bolivia, *Lymanopoda*, 2 spp. n. THIERRY-MIEG (1385), Peru, *Callipia*, *Stannodes*, *Synneuria* and *Marmopteryx* sp. n., and *Geometridæ* spp. n. WARREN (1474), *Thyrididæ*, 2 n. spp., *Epiplem.*, 18 n. spp., *Geometridæ*, about 300 n. spp., n. genn. WARREN (1477), *Siculodes*, 2 spp. n., *Epiplem.* spp. n., *Geometridæ*, many spp. n.
- Diptera*. BISCHOF (130), *Tachinidæ*, 13 spp. n. COQUILLETT (319);

Brazil, *Ceratopogon* sp. n. REED (1123), Chile, *Ornithomyia* n. sp. SPEISER (1328), Rio Grande do Sul, *Stilbometopa* n. sp. STEIN (1342), *Anthomyiidae*, numerous n. spp.

Aphaniptera. BAKER (76), Brazil, *Pulex*, 2 spp. n. ROTHSCILD, N. C. (1191), n. spp. ROTHSCILD (1193), Paraguay, *Ceratopsylla* n. sp.

Hemiptera. BERGROTH (105), Brazil, *Scutellerides*, 2 spp. n. BREDDIN (165); *Edessa*, 13 spp. n. BREDDIN (170), Bolivia, *Colobasiastes* sp. n. BREDDIN (171), *Heteroptera*, many spp. n., n. g. BREDDIN (172), Ecuador, *Tomaspis*, 8 spp. n. DISTANT (387), Northern S. Amer. *Horcias*, 3 spp. n. DISTANT (393), Bolivia, *Cicada* sp. n. HORVÁTH (714), *Colobathristinae* n. spp. JACOBI (734), *Pæcilopectera*, 2 spp. n. JACOBI (736), Brazil, *Cicadidae* and *Fulgoridae*, 6 spp. n. KIRKALDY (813), *Notonectidae*, 2 spp. n. OSBORN (1001), Bolivia and Guiana, 5 spp. n. SCHMIDT (1229), *Flatides*, 8 spp. n. SCHOUTEDEN (1236), *Scutellerides*, 3 spp. n.

Aphidæ. SCHOUTEDEN (1240), *Aphidæ* of S. Amer., 1 sp. n.

Trichoptera. ULMER (1422), Patagonia and Chile, n. spp.

Perlidae. KLAPÁLEK (818), Patagonia, Peru, *Gripopteryx*, 2 spp. n.

Termitidae. DESNEUX (369), Surinam, *Rhinotermes* sp. n. DESNEUX (372), *Calotermes* sp. n., *Termes* sp. n.

Ephemeridæ. ULMER (1422), Patagonia, notes.

Odonata. NEEDHAM (978), Brazil, *Micrathyria*, sp. n. RIS (1176), Patagonia and Chili list, distribution; Buenos Aires, 2 spp. n.

Orthoptera. BORELLI (153, 154), Ecuador, Argentina, Paraguay, *Forfic.* 3 spp. n. BURR (201), Guiana *Forcipula*, Ecuador *Labiá*, Darien *Spongiphora* sp. n. CAUDELL (255), Paraguay, *Forficul.* and *Phasmid.* spp. n. KIRBY (804), Pará, *Photina* sp. n. KIRBY (805), S. Amer. incl. Trinidad, *Phasmidae*, 6 spp. n., gen. n. LYNCH ARRIBÁLZAGA (897), Peru, *Schistocerca* sp. n. MjöBERG (950), *Anisolabis* n. sp. from Matto Grosso, in Sweden. REHN (1129), Bolivia, *Paracanthops cælebs*. REHN (1133), Brazil, Brit. Guiana, Chile, *Acridiidae*, 5 spp. n.

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Dicroneurus magnificus, p. 32, *elegantulus*, p. 33, n. spp.

Epidosis gibbosa, p. 33, *minuta*, p. 34, *noduliformis*, *titania*, p. 35, n. spp.

Campatomyia sinuosa, p. 36, n. sp.

Winnertzia radiata, p. 36, *cylindrica*, p. 37, *affinis separata*, p. 38, n. spp.

Monardia submonilifera, p. 39, n. sp.

Campylomyza crassitarsis, p. 40, n. sp.

Lestremia pinites, p. 42, n. sp.

Frirenica eocenica, p. 43, n. sp.

Heteropeza pulchella, p. 43, n. sp.

Ledomyiella n. g.?, p. 44, *L. succini, rotundata*, p. 45, *eocenica, pygmæa*, p. 46, *crassipes*, p. 47, n. spp.

Sciaridæ. *Palæoheterotricha* n. g. *P. grandis* n. sp., p. 62, *Sciara splendida*, p. 64, *errans, villosa*, p. 65, *botuli*, p. 66, *sendelina*, p. 67, *difficilis*, p. 68, *verticillata, variabilis*, p. 69, *eocenica, diabolica*, p. 71, *orientalis*, p. 72, *rara, bella*, p. 73, *ignorata, preciosa*, p. 74, *klebsii*, p. 75, *prolifera*, p. 76, *rubsaumenia, tertiaria*, p. 77, *robusta, morosa*, p. 78, *palmnickii, minuscula*, p. 79, *villosoides*, p. 80, *defectuosa*, p. 89, n. spp.

Bradysia curiosa, p. 80, *electra, morosoides*, p. 81, *infernalis, agilis*, p. 82, *umbrosa*, p. 83, n. spp.

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Sciarella n. g. *S. mycetophiliformis* n. sp., p. 89.

Helomyza major, p. 22, *media, minuta*, p. 24, Baltic amber, MEUNIER, Feuille Natural. xxxv, n. spp.

Leria alacris, sapromyzoïdes, Baltic amber, MEUNIER, p. 25, Feuille Natural. xxxv, n. spp.

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Palæoheteromyza n. g.

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Palæohemiptera, n. group, for 2 genn. viz., *Presbole* n. g. *hirsuta* n. sp., HANDLIRSCH, p. 2, Mem. Ac. St. Petersb. (viii) xvi, No. 5.

Scytinoptera n. g. *kokeni* n. sp., p. 3, t. c.

Palæomantis n. g. *schmidtii* n. sp., HANDLIRSCH, p. 4, t. c.

Petromantis rossica n. sp., p. 5, HANDLIRSCH, t. c.

Limmatoblatta n. g. *permensis* n. sp., HANDLIRSCH, p. 6, t. c.

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Neuropteroid Insect from Solenhofen (Jura), WALTHER, p. 14, Monatsber. deutsch. Geol. Ges., in Zeitschr. Deutsch. geol. Ges. lv.

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Anthracentomon n. g. *latipenne* n. sp., Upper Westphalian, Belgium, p. 6, pl. i, figg. 4–6, HANDLIRSCH, t. c.

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Breyeria borinensis, figure, description, referred to new family *Breyeriidæ*, pp. 7–10, pl. iii, figg. 9, 10, HANDLIRSCH, t. c.

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Anthracopalara n. g. *falcipennis* n. sp., Upper Westphalian, Belgium, p. 11, pl. iv, figg. 14-16, HANDLIRSCH, t. c.

Blattoidea.

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Protorthoptera.

Omalia macroptera, pl. v, fig. 21, p. 13, referred to new family *Omalidae*, HANDLIRSCH, t. c.

Pachytylopsis persenairei, pl. vi, figg. 22, 23, p. 14, referred to new family *Pachytylopsides*, HANDLIRSCH, t. c.

Palorthopteron n. g. *melas* n. sp., Upper Westphalian, Belgium, pl. v, fig. 24, p. 15, HANDLIRSCH, t. c.

Symballophlebia n. g. *latipennis* n. sp., Upper Westphalian, Belgium, p. 15, pl. vi, figg. 25, 26, HANDLIRSCH, t. c.

Palaomastax n. g. *carbonis* n. sp., Upper Westphalian, Belgium, pl. vii, figg. 27, 28, p. 16, HANDLIRSCH, t. c.

Anthrocomastax n. g. *furcifer* n. sp., Upper Westphalian, Belgium, pl. vii, figg. 29, 30, p. 17, HANDLIRSCH, t. c.

Distasis n. g. *rhizophora* n. sp., Upper Westphalian, Belgium, pl. vii, figg. 31, 32, p. 17, HANDLIRSCH, t. c.

The following is named in Amer. J. Sci. xv.

Megablattina beecheri n. g., n. sp., SELLARDS, p. 312, pl. viii; and in op. cit. xviii, is renamed *Archoblattina* n. n. *beecheri*, and figured and described, pp. 218-221.

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Mylacris anceps, p. 129.

Etoblattina juvenis, p. 131, *coriacea*, p. 213.

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III. SYSTEMATIC.

N.B.—The reference numbers collected under the headings of the various groups refer to "Titles" on pp. 5-89, and are intended to give, in each case, a complete list of all memoirs containing anything of importance in connection with the group.

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The classification of *Hexapoda*, BÖRNER (157).

Remarks on Börner's classification and names, ENDERLEIN, pp. 145, 146, Zool. Anz. xxviii.

Classification by gonapophyses, *Homoithoraka* and *Heterothoraka*, KLAPÁLEK (815).—KLAPÁLEK, Zool. Anz. xxviii, pp. 255-259, further upholds his system and criticises HANDLIRSCH.

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Ophryodera rufomarginata var. n. *circumcinctoides*, HORN, p. 431, t. c.
Pogonostoma subtilis, Diego-Suarez, **n. sp.**, HORN, p. 81, t. c.
Tetracha (Styphlodermma) dodsi, Rhodesia, PÉRINGUEY, p. 167, Ann. S. African Mus. iii, **n. sp.**
Tricondyla horni, S. India, MAINDRON, pp. 263–285, Bull. Soc. ent. France 1904 ; *T. (Derocrania) fusiformis*, Ceylon, HORN, p. 35, pl. f. 1, Spolia Zeylan. ii : **n. spp.**

CARABIDÆ.

[Cf. ABEILLE (2), BREIT (174), BROUN (184), CHOBOUT (268), CSIKI (331, 332), DANIEL (344), DANIEL & DANIEL (349), DEVILLE (374), DESBROCHERS (366), DIMMOCK & KNAB (381), FAIRMAIRE (473, 477), FLEISCHER (514), GANGLBAUER (581, 582), HOLDHAUS (695), KOLBE (829), LESNE (877), MAINDRON (899), PÉRINGUEY (1028), PEYERIMHOFF (1042), PIC (1077), PUEL (1100), REITTER (1152, 1154) SCHAEFFER (1220), SCHATZMAYR (1223), SEMENOW (1272, 1275, 1279, 1280), SLOANE (1310, 1311), TSCHITSCHÉRINE (1401, 1402, 1403), UHAGON (1415), WEBER (1497).]

The larvæ of *Carabidæ*, with detailed study of *Dicælus* and *Brachinus*, DIMMOCK & KNAB, Bull. Springfield Mus. i, pp. 1–55, pls. i–iv.

- Abacetus perturbator*=(*capicola* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
A. auspicatus, p. 189, *vexator*, p. 190, *diversus*, p. 191, *lautus*, *dilucidus*, p. 192, *mimus*, *jucundulus*, p. 193, *servitulus*, *malvernensis*, p. 194, *optimus*, p. 195, *clarus*, *vertagus*, p. 196, *discrepans*, p. 197, *evulsus*, *shilouvanus*, p. 198, *inopinus*, *effulgens*, p. 199, *jubatus*, *pilosulus*, p. 200, S. Africa, PÉRINGUEY, t. c. : **n. spp.**
Acinopus megacephalus=(*emarginatus* Chaud.), *A. gutturosus*=(*megacephalus* Reitt.), BEDEL, p. 139, Bull. Soc. ent. France 1904.
Acupulpus (Balius) drurei, Bagdad, PIC, p. 89, Echange xx, **n. sp.**
Amara nitida var.=(*guntheri* Sahlb.), BEDEL, p. 235, Abeille xxx.
A. (Leiromorpha) uhligi, Mte. Cavallo, HOLDHAUS, p. 226, Munchen. Kol. Zeitschr. ii, **n. sp.**
Anisodactylus nemorivagus atricornis=(*atripes* Ganglb.), BEDEL, p. 235, Abeille xxx.
A. crouzeti, S. France, PUEL, p. 160, Bull. Soc. ent. France 1904, **n. sp.**
Anophthalmus bugezi, larva, XAMBEU, p. 106, Bull. Soc. ent. France 1904.
A. setniki, Bosnia, REITTER, p. 151, Wien. ent. Zeit. xxiii ; *A. sziladyi*, Hungary, CSIKI, p. 170, Rov. Lapok 1904 : **n. spp.**
Aristodacnus **n. n.** for *Macrotelus* Chaud., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
Bembidium scudderi, abnormal ind., HAYWARD, p. 14, Psyche xi.
Bipartiti, this named revived for *Scaritini*: taxonomy, phylogeny, chætotaxy, of *Pasimachides* etc., SLOANE, pp. 704–709, P. Linn. Soc. N. S. Wales 1904.
Bothriopterus angustatus, habitat, BRUYANT & DUFOUR, Feuille Natural. xxxiv, p. 219.

- Brachinus mactus*, p. 171, Rhodesia, *umvotianus*, Natal, p. 172, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Brachynillus* **n. g.** near *Brachyus*, *B. varendorffi* **n. sp.**, cavern E. Africa, REITTER, p. 178, Wien. ent. Zeit. xxiii.
- Brosicus declivis*, characters, SEMENOW, p. 301, Rev. Russe Ent. iv.
- Callida nigripes*, *fervida*, Natal, PÉRINGUEY, p. 174, Ann. S. African Mus. iii, **n. spp.**
- Callistomimus placens*, Rhodesia, PÉRINGUEY, p. 186, t. c. **n. sp.**
- Calosoma*, Australian species, SLOANE, p. 700, P. Linn. Soc. N. S. Wales 1904.
- C. dietzii*, California, SCHAEFFER, p. 197, J. N. York Ent. Soc. xii, **n. sp.**
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- Chaetoleistus* **subg. n.** of *Leistus* for *L. relictus* Sem., SEMENOW, p. 119, Rev. Russe Ent. iv.
- Chlœnius ditulus*, p. 184, *pronus*, p. 185, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
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- C. doddi*, p. 715, *cribrifrons*, p. 716, *atridentis*, p. 718, *nigra*, p. 722, *dingo*, *pectonoda*, p. 724, *misella*, p. 727, *pallidiceps*, p. 728, *cylindripennis*, p. 729, *robusta*, p. 731, *obliquicollis*, p. 732, *ovalipennis*, p. 733, Australia, SLOANE, t. c., **n. spp.**
- Colpodes validus*, Madagascar, FAIRMAIRE, p. 129, Bull. Soc. ent. France 1904, **n. sp.**
- Coptoptera indotata*, Rhodesia, PÉRINGUEY, p. 175, Ann. S. African Mus. iii, **n. sp.**
- Coryza*, *Clivina carinifrons* referred to this, SEMENOV, p. 202, Rev. Russe Ent. iv.
- Craspedophorus laticollis*, *merus*, Rhodesia, PÉRINGUEY, p. 187, Ann. S. African Mus. iii, **n. spp.**
- Crepidopterus favrei*, S. India, MAINDRON, p. 264, Bull. Soc. ent. France 1904, **n. sp.**
- Discoptera* **subg. n.** for *Discoptera przewalskii* Sem., SEMENOV, p. 202, Rev. Russe Ent. iv.
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- Dyschirius unicolor beludsha* subsp. n., TSCHITSCHÉRINE, p. 267, Rev. Russe Ent. 1904; *D. obscurus* var. n. *dilatocollis*, p. 32, *impunctipennis* var. n. *levipunctatus*, p. 33, *bonelli* var. n. *grosse-punctatus*, p. 34, *punctatus* var. n. *basalis*, p. 36, FLEISCHER, Vestnik. Klub. Prostějove ii.
- D. scriptifrons*, *hauseri*, Turkestan, *pseudextensus*, Andalusia, p. 42, *irkutensis*, Siberia, p. 45, *heydeni*, Alžir, p. 51, FLEISCHER, t. c.; *D. fleischeri*, S. France and Algeria, DEVILLE, p. 29, Bull. Soc. ent. France 1904 : n. spp.
- Elaphrus jakovlevi*, *angustus* = (*longicollis* Sahlb.), *angusticollis*, notes, SEMENOV, pp. 102–105, 119, 120, Rev. Russe Ent. iv; *E. latipennis*, characters, SEMENOV, p. 124, Horæ Soc. ent. Ross. xxxvii; *E. longicollis* = (*jakovlevi* Sem.), POPPIUS, p. 364, Annuaire Mus. St. Petersb. viii.
- E. trossulus*, Mongolia, p. 21, *tibetanus*, E. Tibet, p. 22, SEMENOV, Rev. Russe Ent. iv, n. spp.
- Eristomus* = (*Eriocypas* Tsch.), SEMENOV, p. 201, Rev. Russe Ent. iv.
- Forcipator* n. n. for *Oxystomus* Latr., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
- Galerita*, bombarding, SCHMITT, p. 42, Ent. News Philad. xv.
- Gazanus* n. g. near *Anchomenus*, p. 204, *G. elegans* n. sp., Rhodesia, p. 205, PÉRINGUEY, Ann. S. African Mus. iii.
- Graniger* (*Coscinia*) *rufotestaceus*, Bagdad, PIC, p. 89, Echange xx, n. sp.
- Graphipterus shebanus*, Transvaal, PÉRINGUEY, p. 183, Ann. S. African Mus. iii, n. sp.
- Harpalus davidianus* n. n. for *davidi* Tsch., TSCHITSCHERIN, p. xii, Annuaire Mus. St. Petersb. viii; *H. pexus*, characters, DANIEL, p. 66, Munchen. Kol. Zeitschr. ii.
- Hexagonia venusta*, p. 168, *umtalina angustula*, p. 169, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Hystrihopus velox*, Cape Colony, PÉRINGUEY, p. 174, t. c. n. sp.
- Kleptoporus angusticollis*, Natal, PÉRINGUEY, p. 175, t. c. n. sp.
- Læmosthenes naniscus* to *Platynus*, PÉRINGUEY, p. 296, t. c.
- Lebia indagacea*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlviii; *L. phantasma*, *simulatoria*, p. 178, *umtalina*, *inedita*, p. 179, *evicta*, p. 180, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : n. spp.
- Lebistina spectabilis*, Transvaal, PÉRINGUEY, p. 181, t. c. n. sp.
- Leistus*; cf. *Chetoleistus*.
- Lionychus letulus*, Cape Colony, PÉRINGUEY, p. 176, Ann. S. African Mus. iii, n. sp.
- Lioscarites* n. n. for *Holcogaster* Chaud., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
- Macrochilus longicollis*, *spectandus*, p. 170, *varians*, p. 171, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Masoreus australis*, Townsville, SLOANE, p. 535, P. Linn. Soc. N. S. Wales xxix, n. sp.
- Mecodema leviceps*, p. 41, *striatum*, p. 42, *walkeri*, p. 43, New Zealand, BROWN, Ann. Nat. Hist. xiv, n. spp.
- Metallica* = (*Umgenia* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
- M. mashunensis*, Rhodesia, PÉRINGUEY, t. c. n. sp.
- Metaxymorphus robustus*, Natal, PÉRINGUEY, p. 174, t. c. n. sp.
- Morio*, revision of Australian, SLOANE, pp. 530–533, P. Linn. Soc. N. S. Wales xxix.
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- Mystropomus*, characters and taxonomy, SLOANE, p. 704, t. c.
- Nebria atropes*, characters, DANIEL, p. 74, Munchen. Kol. Zeitschr. ii.
- N.* (*Epinebriola* subg. n.), *oxyptera*, Turkestan, DANIEL, p. 76, t. c. n. sp.
- Nebriosoma*, taxonomy, SLOANE, p. 703, P. Linn. Soc. N. S. Wales 1904.

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- Notonomus*, synonymical notes, TSCHITSCHÉRIN, p. 229, Rev. Russe Ent. iv.
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- Pamborus*, characters, table of species, SLOANE, pp. 701-703, P. Linn. Soc. N. S. Wales 1904.
- Penetretus rufipennis* var. n. *semipunctatus*, REITTER, p. 81, Wien. ent. Zeit. xxiii.
- Pentagonica dispar*, Natal, PÉRINGUEY, p. 191, Ann. S. African Mus. iii, **n. sp.**
- Perigona nigriceps* = (*Ectromus pusillus* Pér.), PÉRINGUEY, p. 296, t. c.
- P. rufilabris* var. n. *infusca*, SLOANE, p. 534, P. Linn. Soc. N. S. Wales xxix.
- Phlæozetus cribricollis*, *umtalinus*, Rhodesia, PÉRINGUEY, p. 177, Ann. S. African Mus. iii, **n. spp.**
- Platynus serbicus*, S. Servia, CSIKI, p. 148, Rov. Lapok 1904, **n. sp.**, and Ann. Mus. Hungar. ii, p. 593; *P. (Megalonychus) umtalianus*, *P. (Anchomenus) insuetus*, p. 201, *emeritus*, *insolitus*, p. 202, *obsequiosus*, p. 203, *latiusculus*, p. 204, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii: **n. spp.**
- Platysma (Pseudoeryobius) aquilonium*, N. Russia, TSCHITSCHÉRIN, p. 125, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Platysphyrus* **n. g.** *Clivinini*, p. 710, *P. tibialis* **n. sp.**, Australia, p. 711, SLOANE, P. Linn. Soc. N. S. Wales 1904.
- Polyhirma commista*, S. Africa, PÉRINGUEY, p. 184, Ann. S. African Mus. iii, **n. sp.**
- Pseudomasareus* **n. g.** for *Cymindis canigoulensis*, DESBROCHERS, p. 163, Frelon xii.
- Pseudophonus terrestris*, characters, DANIEL, p. 67, Munchen. Kol. Zeitschr. ii.
- Scaritini*: table of genera of Palearctic, and of species of *Scarites*, with synonymy and distribution, TSCHITSCHÉRINE, pp. 257-265, Rev. Russe Ent. 1904.
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- S. cyclopius*, p. 30, *israelitus*, p. 31, Syria, FLEISCHER, Vestnik. Klub. Prostejove ii, **n. spp.**
- Stomini*, new sub-tribe, TSCHITSCHÉRIN, p. 150, Rev. Russe Ent. iv.
- Stomis*: table of species, SEMENOW, pp. 187-193, Horæ Soc. ent. Ross. xxxvii.
- S. hyrcanus*, N. Persia, TSCHITSCHÉRIN, Rev. Russe Ent. iv; *S. tschitscherini*, p. 152, *danielanus*, p. 153, Transcaucasus, SEMENOV, t. c.: **n. spp.**
- Styphromerus plausibilis*, Rhodesia, PÉRINGUEY, p. 173, Ann. S. African Mus. iii, **n. sp.**
- Tefflus*, KOLBE gives his taxonomy in an extended form, Berlin. ent. Zeitschr. xlix, pp. 117-158.
- T. angustipes* subsp. n. *uvinsanus*, p. 131, *violaceus wituensis* subsp. n., p. 134, KOLBE, t. c.
- Thalassophilus longicornis* = (*Trechus kokujevi* Tsch.), SEMENOV, p. 202, Rev. Russe Ent. iv.
- Thyreopterus angusticollis*, *lugubrinus*, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**

- Tichonia* **n. n.** for *Caletor* Tsch., SEMENOV, p. 201, Rev. Russe Ent. iv.
Trachypachys zetterstedti, localities, synonymy, SEMENOV, p. 37, t. c.
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T. (Duvalius) knauthi, Rhætian Alps, GANGLBAUER, p. 190, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) diniensis*, with var. *cautus*, p. 201, *convexicollis*, p. 202, Basses-Alpes, PEYERIMHOFF, Bull. Soc. ent. France 1904; *T. (Anophthalmus) pueli*, Ariège, CHABAUT, p. 212, Bull. Soc. ent. France 1904; *T. (Anophthalmus) vulcanus*, Ariège, ABEILLE, p. 198, Bull. Soc. ent. France 1904; *T. (Anophthalmus) holdhausi*, Venetian Alps, GANGLBAUER, p. 224, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) marice*, Dobratsch, SCHATZMAYR, p. 210, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) vranensis*, Herzegovina, BREIT, p. 28, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) velebiticus*, Croatia, GANGLBAUER, p. 350, Munchen. Kol. Zeitschr. ii; *T. concinnus*, Caucasus, TSCHITSCHÉRIN, p. 148, Rev. Russe Ent. iv : **n. spp.**
Tribax bibersteini var. **n. maljushenkoi**, KOENIG, p. 140, Wien. ent. Zeit. xxiii.
Trichosternus hudsoni, New Zealand, BROWN, Ann. Nat. Hist. xiv, p. 44, **n. sp.**
Umgenia; cf. *Metallica*.
Xenitenus natalicus, Natal, PÉRINGUEY, p. 176, Ann. S. African Mus. iii, **n. sp.**
Zabrus, monograph of Spanish and Portuguese, UHAGON, pp. 363–436, Mem. Soc. espan. ii.
Z. vasconicus, Spain, p. 393, *humeralis*, p. 424, Portugal, UHAGON, t. c. **n. spp.**
Zeloticus umtalianus, Rhodesia, PÉRINGUEY, p. 185, Ann. S. African Mus. iii, **n. sp.**

HALIPLIDÆ.

- Brychius rossicus* and *cristatus*, note, SEMENOV, pp. 303, 314, Rev. Russe Ent. 1904.
Haliplus flavicollis var. **n. pallida** (?*H. fulvicollis*=*jakolevi*); *H. fluvialis*=(*schaumi* Solsky), SEMENOV, p. 202, Rev. Russe Ent. iv; *H. variegatus*=(*maculatus* Motsch), SEMENOV, p. 216, t. c.; *H. transvolgensis* and *dalmatinus* queried; SEMENOV, p. 314, t. c.
H. transvolgensis, Saratov, SEMENOV, p. 216, t. c. **n. sp.**

DYTISCIDÆ.

[Cf. ABEILLE (3), GANGLBAUER (582), RÉGIMBART (1124, 1125).]

- Agabus labiatus* Brahm=(*femoralis* Payk.), BEDEL, 234, Abeille xxx.
Copelatus internus, Fernando Po, RÉGIMBART, p. 66, Ann. Mus. Genova xli;
C. geayi, Guiana, RÉGIMBART, p. 225, Bull. Mus. Paris 1904 : **n. spp.**
Hydroporus aubei varr., GANGLBAUER, p. 354, Munchen. Kol. Zeitschr. ii.
H. kocae, Slavonia, GANGLBAUER, p. 352, t. c. : **n. sp.**
Hyphydrus ovatus var., W. E. SHARP, p. 43, Ent. Mag. xl.
H. caviceps, Congo, RÉGIMBART, p. 64, Ann. Mus. Genova xli, **n. sp.**
Laccophilus virens Brahm=(*obscurus* Panz.), BEDEL, p. 235, Abeille xxx.
L. flaviventris, Guiana, RÉGIMBART, p. 224, Bull. Mus. Paris 1904, **n. sp.**

Siettitia **n. g.** near *Hydroporus*, p. 226, for *S. balsetensis* **n. sp.**, Var, in a deep well, p. 227, ABEILLE, Bull. Soc. ent. France 1904.

GYRINIDÆ.

Dineutes subserratus, Fernando Po, RÉGIMBART, p. 67, Ann. Mus. Genova xli, **n. sp.**

Gyrites gayi, Guiana, RÉGIMBART, p. 226, Bull. Mus. Paris 1904, **n. sp.**

HYDROPHILIDÆ.

[Cf. BROUN (185), GANGLBAUER (580).]

The *Hydrophilidæ* of Europe, GANGLBAUER, pp. 141–286, Käf. Mitteleur. iv.

Dicyrtocercyon **subg. n.**, *C. ustulatus* Preyssl, GANGLBAUER, p. 276, t. c.

Hydræna, notes on French, DEVILLE, p. 187, Abeille xxx.

Limnebius paganettii, Dalmatia, GANGLBAUER, p. 261, Käf. Mitteleur. iv, **n. sp.**

Paraliocercyon **subg. n.**, *C. depressum* etc., GANGLBAUER, p. 276, t. c.

Sphæridium scarabæoides in N. America, HOUGHTON, p. 310, Ent. News Philad. xv.

Thomosis **n. g.** near *Hydrostygnum*, p. 273, for *T. guanicola* **n. sp.**, Bounty isld., BROUN, Ann. Nat. Hist. xiv.

STAPHYLINIDÆ.

[Cf. BERNHAUER (107–109), BREIT (174), BROUN (184), BRUES (188), CAMERON (221), CASEY (248), FAUCONNET & VITURAT (480), FAUVEL (483–485, 487–491), GANGLBAUER (581–583), KLIMA (820), LEA (864), LUZE (895, 896), PENECKE (1016), PÉRINGUEY (1028), POPPIUS (1093, 1094, 1096), SCHATZMAYR (1223), WASMANN (1484A, 1486).]

The second part of Bernhauer's Palæarctic *Staphylinidæ*, published in 1902, is recorded only this year.

Ænictonia anommatophila, *kohli*, Congo, WASMANN, p. 637, Zool. Jahrb. Suppl. vii; *A. raffrayi*, Usambara, FAUVEL, p. 285, Rev. Ent. franc. 1904 : **n. spp.**

Agerodes germaini, *pulcher*, p. 225, *semiviolaceus*, p. 226, *capitalis*, p. 227, *denticulatus*, p. 228, *frater*, *quadriceps*, p. 229, S. America, BERNHAUER, Stettin. Ent. Zeit. lxx, **n. spp.**

Aleochara (Heterochara) glasunovi, Centr. Asia, LUZE, p. 113, Horæ Soc. ent. Ross. xxxvii; *A. andrevesi*, p. 66, *viatica*, p. 67, India, FAUVEL, Rev. Ent. franc. xxiii; *A. parvicollis*, Peru, BERNHAUER, p. 240, Stettin. Ent. Zeit. lxx : **n. spp.**

Alianta phlæoporina, Sinai, FAUVEL, p. 72, Rev. Ent. franc. xxiii, **n. sp.**

Amarochara ocaleoides, p. 166, *korbi*, p. 167, Asia Minor, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, **n. spp.**

Anceus cordicollis, Madagascar, FAUVEL, p. 296, Rev. Ent. franc. 1904, **n. sp.**

Anisopsis **n. g.**, near *Oxytelus*, *flexuosa*, Zambesi, p. 108, *carinata*, Zanzibar, p. 109, **n. spp.**, FAUVEL, t. c.

Anommatophilus **n. g.** near *Pygostenus*, p. 642, *A. kohli*, pl. xxxii, fig. 13, *minor*, *tenellus*, **n. spp.**, Congo, p. 643, WASMANN, Zool. Jahrb. Suppl. vii.

Anommatoxenus **n. g.** near *Pygostenus*, p. 656, *A. clypeatus*, **n. sp.**, Congo, p. 657, pl. xxxii, fig. 16, WASMANN, t. c.

Anthobium sikkimi, Darjeeling, FAUVEL, p. 88, Rev. Ent. franc. xxiii, **n. sp.**

- Apatetica semiviolacea*, Java, *rotundicollis*, Khasia hills, p. 85, *sparsicollis*, Lombok, *laevicollis*, Tonkin, p. 86, FAUVEL, t. c. **n. spp.**
- Astenus melanurus* var. *subnotatus*, FAUVEL, p. 51, t. c.
- Astilbus incola*, India, FAUVEL, p. 63, t. c. **n. sp.**
- Atemeles pratensoides*, Luxemburg, WASMANN, p. 10, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Atheta bertolinii*, Italy, PORTA, Riv. Col. ital. ii, ?p. 130 [not seen by Recorder]; *A. (Hydrosmeeta) orientis*, Sinai, FAUVEL, p. 71, Rev. Ent. franc. xxiii; *A. (Aloconota) frontalis*, Central Asia, LUZE, p. 108, Horæ Soc. ent. Ross. xxxvii; *A. nilgiriensis*, India, FAUVEL, p. 62, Rev. Ent. franc. xxiii; *A. pubicollis*, Australia, p. 238, *dohrni*, Ecuador, p. 239, BERNHAUER, Stettin Ent. Zeit. lxxv : **n. spp.**
- Baptopoda* subg. **n.** of *Oxypoda*, BERNHAUER, p. 47, Verh. Ges. Wien 1902, Beiheft.
- Belonuchus quadriceps*, p. 287, *holisinus*, p. 288, Usambara, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Bledius glasunovi*, Centr. Asia, LUZE, p. 87, Horæ Soc. ent. Ross. xxxvii; *B. distans*, p. 304, *perrieri*, *lugubris*, p. 305, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *B. bellicosus*, Sumatra, *conicicollis*, Tonkin, p. 111, *arenicola*, Malabar, *helferi*, Burma, p. 112; FAUVEL, t. c. : **n. spp.**
- Bolbophites* **n. g.** near *Ophites*, p. 278, *pustulosus*, pl. i, fig. 2, *aspericeps*, **n. spp.**, Brazil, p. 279, FAUVEL, t. c.
- Bolitochara semiaspera*, India, FAUVEL, p. 65, t. c. **n. sp.**
- Bombylodes* **n. g.** for *Bombylius* Fauv., FAUVEL, p. 43, t. c.
- Boopinus* subg. **n.** of *Trogophlæus*, for *T. memnonius* etc.; KLIMA, p. 56, Munchen. Kol. Zeitschr. ii.
- Boreaphilus sahlbergi*, E. Siberia, POPPIUS, p. 106, Medd. Soc. Faun. Fenn. 1902/03, **n. sp.**
- Bryothinusa* **n. g.** near *Thinusa*, p. 312, *B. catalinae* **n. sp.**, California, p. 313, CASEY, Canad. Ent. xxxvi.
- Cænonica æthiopica*, Usambara, FAUVEL, p. 284, Rev. Ent. franc. 1904, **n. sp.**
- Coprophilus striatipennis* Epp., valid, LUZE, p. 80, Horæ Soc. ent. Ross. xxxvii.
- C. (Zonoptilus) reitteri*, Centr. Asia, LUZE, p. 69, Munchen. Kol. Zeitschr. ii; *C. bimaculatus*, Centr. Asia, LUZE, p. 79, Horæ Soc. ent. Ross. xxxvii; *C. alticola*, Himalaya, FAUVEL, p. 93, Rev. Ent. franc. 1904 : **n. spp.**
- Coryphium gredleri* var. **n.** *dilutipes*, GANGLBAUER, p. 197, Munchen. Kol. Zeitschr. ii.
- C. parvulum*, E. Siberia, POPPIUS, p. 107, Medd. Soc. Faun. Fenn. 1902/03, **n. sp.**
- Crymus* **n. g.** near *Planeustomus*, p. 92, *C. antarcticus* **n. sp.**, New South Georgia, p. 93, FAUVEL, Rev. Ent. franc. xxiii.
- Cryptobium extraneum*, Bengal, FAUVEL, p. 55, t. c.; *C. myrmecocephalum*, Clarence Riv., pl. iv, fig. 3, p. 71, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Delopsis microphthalmia*, Java, FAUVEL, p. 95, Rev. Ent. franc. 1904, **n. sp.**
- Demera kohli*, *nitida*, Congo, WASMANN, p. 630, Zool. Jahrb. Suppl. vii, **n. spp.**
- Deropoda* subg. **n.** of *Oxypoda*, BERNHAUER, p. 48, Verh. Ges. Wien lii, Beiheft.
- Dicaæ ventralis*, W. Australia, p. 73, *ruficollis*, N. S. W., p. 74, with var. *nigriventris*, p. 75, LEA, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Diglossa peyerimhoffi*, p. 73, *cameroni*, p. 74, Red Sea, FAUVEL, Rev. Ent. franc. xxiii; *D. testacea*, *subtilissima*, Perim, CAMERON, p. 157, Ent. Mag. xl : **n. spp.**
- Dinusu æthiopica*, W. Africa, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, p. 15, **n. sp.**

- Discoxenus* n. g. near *Doryloxenus*, p. 655, *D. lepisma*, *assmuthi*, India, p. 66, n. spp., WASMANN, Zool. Jahrb. Suppl. vii.
- Dorylocerus* n. g. near *Dorylobius*, p. 627, for *D. fossulatus* n. sp., Congo, p. 628, WASMANN, t. c.
- Dorylogaster* n. g. *Aleocharinorum*, p. 625, for *D. longipes* n. sp., p. 626, pl. xxx, fig. 4, West Africa, with *Anomma*, WASMANN, t. c.
- Dorylomimus* n. g. near *Mimeciton*, p. 620, for *D. kohli* n. sp., Congo, p. 622, WASMANN, t. c.
- Dorylonia* n. g. near *Myrmedonia*, *D. laticeps*, pl. xxxi, fig. 8, n. sp., Congo, WASMANN, p. 635, t. c.
- Dorylonilla* n. g. near *Notothecata*, *D. spinipennis*, pl. xxx, fig. 6, n. sp., Congo, WASMANN, p. 631, t. c.
- Dorylophila* n. g. near *Aleochara*, p. 632, *D. rotundicollis* n. sp., Congo, p. 633, pl. xxxi, fig. 7; WASMANN, t. c.
- Dorylopora* n. g. near *Dorylobius*, p. 628, for *D. costata*, pl. xxx, fig. 5, *kohli*, n. spp., Congo, p. 629, WASMANN, t. c.
- Doryloxenus annulatus*, p. 653, *eques*, *kohli*, *hirsutus*, p. 654, Africa, *transfuga*, *termitophilus*, p. 655, WASMANN, t. c. : n. spp.
- Dromeciton* n. g. near *Tetradonia*, p. 282, *wagneri* n. sp., Brazil, p. 283, pl. i, fig. 4, FAUVEL, Rev. Ent. franc. 1904.
- Eccoptoglossa* n. g. near *Myrmecopora*, p. 105, *E. obscura* n. sp., Central Asia, p. 106, LUZE, Horæ Soc. ent. Ross. xxxviii.
- Ecitonidia* and *Eciton*, relations, BRUES, p. 21, Psyche xi.
- Ecitopora nitidiventris*, Texas, BRUES, p. 250, Ent. News Philad. xv, n. sp.
- Eleusis planicollis* Macl. = (*australis* Fauv.), LEA, p. 77, P. Linn. Soc. N. S. Wales xxix.
- Eleusis conradti*, *kolbei*, Usambara, FAUVEL, p. 292, Rev. Ent. franc. 1904; *E. perrieri*, *apicalis*, p. 298, *heterodera*, *boops*, p. 299, *hydrocephala*, p. 300, Madagascar, FAUVEL, t. c.; *E. rufiventris*, p. 81, *conifrons*, Sumatra, *warburgi*, Celebes, p. 82, *disculis*, Sumatra, *plagiata*, *rotundiceps*, Sikkim, p. 83, *quadridens*, Perak, *lunigera*, Malasia, p. 84, FAUVEL, t. c.; *E. spectabilis*, p. 4, *propinqua*, p. 5, *brachyptera*, *rectangulum*, p. 6, *bicarinata*, p. 7, *bisulcata*, p. 8, Madagascar, *mutica*, Gaboon, p. 9, BERNHAUER, Verh. Ges. Wien liv; *E. cephalotes*, Mexico, BERNHAUER, p. 218, Stettin Ent. Zeit. lxxv : n. spp.
- Erchomus aluticollis*, New Guinea, FAUVEL, p. 295, Rev. Ent. franc. 1904, n. sp.
- Eulissus silvaticus*, p. 230, Madagascar, *purpuripennis*, Shanghai, p. 231, BERNHAUER, Stettin Ent. Zeit. lxxv, n. spp.
- Eunonia* n. g. *Omalini*, p. 313, *E. keeniana* n. sp., Brit. Columbia, p. 314, CASEY, Canad. Ent. xxxvi.
- Eupsorus* n. g. ? near *Omalium*, p. 45, for *E. costatus* n. sp., New Zealand, p. 46, BROWN, Ann. Nat. Hist. xiv.
- Euryalea mongolica*, Shanghai, BERNHAUER, p. 132, Verh. Ges. Wien 1902, Beiheft, n. sp.
- Falagria nilgiriensis*, India, FAUVEL, p. 62, Rev. Ent. franc. xxiii, n. sp.
- Geodromicus punctulatus*, p. 77, *ovalis*, p. 78, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, n. spp.
- Geostiba aurogemmata*, Algeria, FAUVEL, p. 75, Rev. Ent. franc. xxiii, n. sp.
- Haploderus speculiventris*, Java, FAUVEL, p. 97, t. c. n. sp.
- Holusus tenuicornis*, Gaboon, p. 13, *plicatus*, p. 14, *elegans*, *sumatrensis*, p. 15, Sumatra, BERNHAUER, Verh. Ges. Wien liv; *H. sinuatus*, Mentawai, BERNHAUER, p. 217, Stettin Ent. Zeit. lxxv; *H. parcestriatus*, Java, *pennifer*, Annam, p. 76, *brevipennis*, *insularis*, Malasia, p. 77, *aberrans*, Ceylon, p. 78, FAUVEL, Rev. Ent. franc. xxiii : n. spp.
- Holotrochus coriaceus*, p. 306, *nigrita*, *nitescens*, p. 307, *marginicollis*, *specularis*, p. 308, *fairmairei*, p. 309, Madagascar, FAUVEL, t. c. n. sp.
- Homalium* (*Phloeostiba*) *usambaræ*, Africa, FAUVEL, p. 291, t. c.; *H. hova*,

- p. 300, *costipenne*, p. 301, Madagascar, FAUVEL, t. c.; *H. sulcicolle*, *chlorizans*, *obesum*, p. 89, *rude*, p. 90, Sumatra, FAUVEL, t. c. : **n. spp.**
- Homalota crenulata*, India, FAUVEL, p. 65, t. c. **n. sp.**
- Hoplandria mirabilis*, Peru, BERNHAUER, p. 237, Stettin Ent. Zeit. lxxv, **n. sp.**
- Hoplitodes* **n. g.** p. 109, *echidne*, **n. sp.**, Natal, p. 110, FAUVEL, Rev. Ent. franc. 1904.
- Lathrobium (Glyptomerus) wingelmulleri*, Adamello-Alps, BREIT, p. 29, Munchen. Kol. Zeitschr. ii; *L. sinaicum*, Sinai, FAUVEL, p. 71, Rev. Ent. franc. xxiii : **n. spp.**
- Leistotrophus africanus*, Cameroons, BERNHAUER, p. 236, Stettin Ent. Zeit. lxxv, **n. sp.**
- Leptacinus apicipennis*, St. Thomas, BERNHAUER, p. 234, t. c. **n. sp.**
- Leptusa (Typhlopasilia) pinkeri*, Mt. Adamello, GANGLBAUER, p. 196, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Lesteva turkestanica*, Seravshan, LUZE, p. 76, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Lispinus usambaræ*, *insignicollis*, Usambara, FAUVEL, p. 293, Rev. ent. franc. 1904; *L. varians*, p. 296, *agnatus*, p. 297, *obscurellus*, p. 298, Madagascar, FAUVEL, t. c.; *L. macropterus*, Celebes, p. 78, *validicornis*, Queensland, *sulcatus*, New Guinea, p. 79, *rugipennis*, *acicularis*, *quadrinotatus*, p. 80, Java, *binotatus*, New Guinea, p. 81, FAUVEL, t. c.; *L. pubiventris*, Gaboon, p. 10, *specularis*, Nias isl., p. 11, *curticollis*, Tonkin, *elongatus*, Sumatra, p. 12, BERNHAUER, Verh. Ges. Wien liv : **n. spp.**
- Maseochara indica*, Nilgiri hills, *javana*, Borneo, etc., FAUVEL, p. 66, Rev. Ent. franc. xxiii, **n. spp.**
- Maurachelia* **subg. n.** of *Oxyopoda*, BERNHAUER, p. 48, Verh. Ges. Wien 1902, Beiheft.
- Medon mimeticus*, Madagascar, BERNHAUER, p. 224, Stettin Ent. Zeit. lxxv, **n. sp.**
- Megacronus lineipennis*, India, FAUVEL, p. 60, Rev. Ent. franc. xxiii, **n. sp.**
- Megalops hova*, *bifenestratus*, p. 309, *cribriceps*, p. 310, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *M. brevipennis*, Brazil, BERNHAUER, p. 222, Stettin Ent. Zeit. lxxv : **n. spp.**
- Megarthrus prosseni*, Dobratsch, SCHATZMAYR, p. 212, Munchen. Kol. Zeitschr. ii; *M. bimaculatus*, Ceylon, *basicornis*, Sikkim, FAUVEL, p. 87, Rev. Ent. franc. xxiii : **n. spp.**
- Microglossa rugipennis*, Seravshan, LUZE, p. 114, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Mimophites* **n. g.** near *Ophites*, p. 280, *bouvieri*, pl. i, fig. 3, *laticeps* **n. spp.**, Brazil, p. 281, FAUVEL, Rev. Ent. franc. 1904.
- Mitomorphus obsoletus*, India, FAUVEL, p. 56, t. c. **n. sp.**
- Mycetoporus sibiricus*, E. Siberia, POPPIUS, p. 1, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Myrmedonia kohli*, *pedisequa*, Congo, WASMANN, p. 634, Zool. Jahrb. Suppl. vii; *M. termitobia*, p. 206, *termitophila*, p. 207, *compransor*, p. 208, *simplex*, *uncinata*, p. 209, *procar*, p. 210, *puncticollis*, p. 211 *mima*, p. 212, *capicola*, *gentilis*, p. 213, *jucunda*, *gravidula*, p. 214, *illotula*, p. 215, *hirtella*, *conifera*, p. 216, *constrictata*, *anthracina*, p. 217, *gracilicornis*, p. 218, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**
- Ocalea*, cf. *Sorecocephala*.
- Ocyopus similis*, variation of wings, MÜLLER, p. 171, var. *n. semialatus*, p. 172, Wien. ent. Zeit. xxiii.
- Ocyusa hibernica*, Rye, note, NEWBERY, p. 251, Ent. Mag. xl; *O. laticollis* Thoms. = (*hibernica* Rye), BERNHAUER, p. 140, Verh. Ges. Wien 1902, Beiheft.

- O. araxis*, Caucasus, p. 139, *fortepunctata*, Turkestan, p. 145, *caucasica*, Caucasus, p. 147, *O. (Parocyusa* subg. n.) *holdhausi*, Carinthia, p. 149, BERNHAUER, t. c. **n. spp.**
- Ædichirus ventralis*, *rufitarsis*, p. 318, *kolbei*, p. 319, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *Æ. tricolor*, Australia and Tasmania, p. 61, pl. iv, fig. 1, *terminalis*, N. W. Australia, p. 62, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Omalium nitidicolle*, p. 108, *obscuricorne*, p. 110, Lapland, POPPIUS, Medd. Soc. Faun. Fenn. 1902/03; *O. arenarium*, Cape Good Hope, BERNHAUER, p. 16, Verh. Ges. Wien liv : **n. spp.**
- Osorius sparsior*, Usambara, FAUVEL, p. 291, Rev. Ent. franc. 1904; *O. alutaceus*, Madagascar, *truncorum*, Zanzibar, p. 17, *eppelsheimi*, Mentawai, p. 18, *eggerti*, St. Thomas, p. 19, BERNHAUER, Verh. Ges. Wien liv; *O. strangulatus*, India, FAUVEL, p. 47, Rev. Ent. franc. xxiii : **n. spp.**
- Oxypoda arabs*, Sinai, FAUVEL, p. 72, t. c.; *O. asiatica*, Turkestan, p. 74, *skalitzkyi*, Europe, p. 75, *pubescens*, Italy, p. 76, *doderoi*, Europe, p. 78, *O. (Deropoda* subg. n.) *cingulum*, Syria, p. 87, *caucasica*, Caucasus, *nova*, S. Europe, p. 94, *O. (Maurachelia* subg. n.) *pilosicollis*, Europe, p. 97, *antennata*, Turkey, p. 98, *schusteri*, Balkans and East Siberia, p. 104, *incognita*, Bucharest, p. 107, *fortepunctata*, Caucasus, p. 108, *meridionalis*, Greece and Syria, p. 114, *fauveli*, E. Siberia, p. 115, *minutissima*, S. Europe, p. 122, *longicollis*, Crimea, p. 123, BERNHAUER, Verh. Ges. Wien 1902, Beiheft : **n. spp.**
- Oxytelopsis madecassa* Tananarive, *genalis*, Perak, FAUVEL, p. 96, Rev. Ent. franc. 1904, **n. spp.**
- Oxytelus africanus* n. n. for *flavipennis* Epp. nec Kr., LUZE, p. 83, Horæ Soc. ent. Ross. xxxvii.
- O. excellens*, p. 81, *robusticornis*, p. 82, *luridipennis*, p. 84, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii; *O. lobatus*, p. 303, *anticus*, p. 304, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *O. bubalus*, Java, p. 97, *atriceps*, p. 98, Celebes, *megacephalus*, India, *gigantulus*, p. 99, *migrator*, Siam, *ruptus*, Java, p. 100, *heterophthalmus*, N. S. Wales, *dilutipennis*, W. Africa, p. 101, *planus*, Abyssinia, *nitidipennis*, Madagascar, p. 103, *claviger*, Abyssinia, *incisicollis*, E. Africa, p. 104, *bicolor*, Madagascar, Gaboon, p. 104, *sculptiventris*, Madagascar, p. 105, *crassus*, *speculum*, p. 106, *dentifrons*, S. America, *scorpio*, St. Domingo, p. 107, FAUVEL, t. c.; *O. curtus*, p. 219, *rugicollis*, p. 220, Australia, *opacinus*, Brazil, p. 221, BERNHAUER, Stettin Ent. Zeit. lxxv : **n. spp.**
- Pachycorinus ganglbaueri*, Madagascar, BERNHAUER, p. 234, t. c. **n. sp.**
- Pæderus usambaræ*, Africa, FAUVEL, p. 290, Rev. Ent. franc. 1904; *P. andreweesi*, p. 53, *gratiosus*, p. 54, India, FAUVEL, t. c.; *P. trimerus*, N. Guinea, FAUVEL, p. 294, Rev. Ent. franc. 1904 : **n. spp.**
- Palaminus suturalis*, p. 319, *madecassa*, *pennifer*, *nossibianus*, p. 320, *allocerus*, *brunneus*, *circumflexus*, p. 321, Madagascar, FAUVEL, t. c.; *P. simoni*, India, FAUVEL, p. 50, t. c. : **n. spp.**
- Parosorius* **n. g.** for *Anceus foersteri*, BERNHAUER, p. 222, Stettin Ent. Zeit. lxxv.
- Parocalea* **n. g.** for *Ilyobates baicalica* Eppelsh., BERNHAUER, p. 169, Verh. Ges. Wien 1902 Beiheft.
- Parocyusa* **subg. n.** cf. *Ocyusa*.
- Philonthus tantulus*, p. 94, *indubius*, p. 95, *elegantulus*, p. 97, *P. (Gabrius) insignis*, p. 98, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, **n. spp.**
- Phlæopora opaca*, Europe, p. 194, *secretæ*, Caspian, p. 196, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, **n. spp.**
- Phyllodrepa (Dropephylla) gobanzi*, Dalmatia, GANGLBAUER, p. 650, Verh. Ges. Wien liv, **n. sp.**

- Pinophilus piceus*, India, FAUVEL, p. 51, Rev. Ent. franc. xxiii; *P. eppelsheimi*, Sumatra, BERNHAUER, p. 223, Stettin Ent. Zeit. lxxv : **n. spp.**
- Placusa simulans*, Usambara, FAUVEL, p. 286, Rev. Ent. franc. 1904, **n. sp.**
- Planeustomus indicus*, Burma, FAUVEL, p. 91, t. c. **n. sp.**
- Platylola simplex*, Gaboon, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, p. 41, **n. sp.**
- Platyprosopus niloticus*, Abyssinia, FAUVEL, p. 275, Rev. Ent. franc. 1904, **n. sp.**
- Platystethus spinicornis*, p. 85, *flavipennis*, p. 86, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, **n. spp.**
- Polychelus* **n. g.** *Omalini*, p. 74, *P. æneipennis* **n. sp.**, Centr. Asia, p. 75, LUZE, t. c.
- Psilotrichus* **n. g.** near *Ancyrophorus*, p. 69, *P. elegans* **n. sp.**, Turkestan, p. 70, LUZE, Munchen. Kol. Zeitschr. ii.
- Pygostenus pusillus*, p. 646, *bicolor*, *lævicollis*, p. 647, *fauveli*, *splendidus*, *lujæ*, *pubescens*, p. 648, *setulosus*, *kohli*, *longicornis*, *alutaceus*, p. 649, Africa, WASMANN, Zool. Jahrb. Suppl. vii, **n. spp.**
- Quediis luridipennis* MacL.=(*semiviolaceus* Blackb.), LEA, p. 65, P. Linn. Soc. N. S. Wales xxix.
- Q.* (*Microsaurus*) *kraussi*, Herzegowina, PENECKE, p. 135, Wien. ent. Zeit. xxiii; *Q.* (*Ediquus*) *solskyi*, p. 99, *rufilabris*, p. 100, *Q.* (*Microsaurus*) *fusicornis*, p. 101, *Q.* (*Sauridus*) *imitator*, p. 102, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii : **n. spp.**
- Scopæus triangularis*, Seravschan, LUZE, p. 90, t. c. **n. sp.**
- Scytoglossa* **n. g.** *Myrmedoniini*, p. 109, *S. delicata*, **n. sp.**, Seravschan, p. 110, LUZE, t. c.
- Soreocephala* **subg. n.** for *Ocalea reitteri*; BERNHAUER, p. 159, Verh. Ges. Wien 1902, Beiheft.
- Staphylinus* (*Ocypus*) *langei*, Congo, BERNHAUER, p. 235, Stettin Ent. Zeit. lxxv; *S.* (*Trichoderma*) *glusunovi*, p. 92, *S.* (*Tusgius*) *transversiceps*, p. 93, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii; *S. suspectus*, India, FAUVEL, p. 57, Rev. Ent. franc. xxiii : **n. spp.**
- Stenus parilis*, Centr. Asia, LUZE, p. 88, Horæ Soc. ent. Ross. xxxvii; *S. protector*, *irroreus*, p. 311, *uniformis*, *volvulus*, p. 312, *obconicus*, *mirus*, p. 313, *alluaudi*, *sicardi*, p. 314, *goudoti*, *dieganus*, p. 315, *chloropterus*, *pluripunctus*, *creberrimus*, p. 316, *troile*, *delphinus*, p. 317, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *S. belli*, p. 47, *ventricosus*, p. 48, *andrewesi*, *consors*, *millepunctus*, p. 49, India, FAUVEL, t. c. : **n. spp.**
- Stilicoderus umbratus*, India, FAUVEL, p. 52, t. c. **n. sp.**
- Stilicus quadrimaculatus*, Usambara, FAUVEL, p. 289, t. c.; *S. anommatophilus*, Congo, WASMANN, p. 658, Zool. Jahrb. Suppl. vii : **n. spp.**
- Suniopsis politus*, pl. iv, fig. 2, W. Australia, LEA, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Sunius lithocharoides* var. **n.** *quadrimaculatus*, LUZE, p. 90, Horæ Soc. ent. Ross. xxxvii.
- S. gracilicornis*, Seravschan, LUZE, p. 89, t. c.; *S. apiciflavus*, p. 68, *trilineatus*, p. 69, *brevicollis*, pl. iv, fig. 13, p. 70, Australia, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Sympolemon tiro*, Congo, WASMANN, pl. xxxii, fig. 12, p. 641, Zool. Jahrb. Suppl. vii, **n. sp.**
- Tachinus tundræ*, p. 1, *jacuticus*, p. 2, *ochoticus*, p. 5, East Siberia, POPPIUS, Ofv. Finska Forh. xlvii, No. 13; *T. splendens*, Seravschan, LUZE, p. 103, Horæ Soc. ent. Ross. xxxvii : **n. spp.**
- Tachyporus gracilicornis*, Seravschan, LUZE, p. 104, t. c. **n. sp.**
- Tetradelus* **n. g.**, new tribe near *Homaliini*, p. 90, *T. trigonuroides* **n. sp.**, Sikkim, p. 91, FAUVEL, Rev. Ent. franc. xxiii.

- Trilobitideus paradoxus*, Port Elizabeth, p. 619, *insignis*, Congo, p. 620, Wasmann, Zool. Jahrb. Suppl. vii, **n. spp.**
- Trogophlæus*, revision of palæarctic, **subg. n.** cf. *Boopinus*, KLIMA, pp. 43–66, Munchen. Kol. Zeitschr. ii.
- T. bernhaueri*, Irkutsk, p. 50, *reitteri*, Corfu, p. 57, *heydeni*, Turkestan, p. 59, KLIMA, t. c.; *T. alluandi*, *dieganus*, p. 302, *malgaceus*, *boops*, p. 303, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *T. (Thinodromus) brevicornis*, Seravschan, LUZE, p. 80, Horæ Soc. ent. Ross. xxxvii; *T. fuscipalpis*, Ceylon, *lepidicornis*, Celebes, FAUVEL, p. 94, Rev. Ent. franc. 1904; *T. pustulatus*, p. 20, *socius*, Annam, *brasiliensis*, p. 21, *fortepunctatus*, p. 22, Brazil, *caseyi*, N. America, p. 23, *varicornis*, Grenada, p. 24, BERNHAUER, Verh. Ges. Wien liv, **n. spp.**
- Xantholinus olliffi*, valid, characters, LEA, p. 66, P. Linn. Soc. N. S. Wales xxix.
- X. (Nudobius) pictipennis*, Africa, FAUVEL, p. 289, Rev. Ent. franc. 1904; *X. insularis*, Madagascar, p. 232, *bilimeki*, Mexico, p. 233, BERNHAUER, Stettin Ent. Zeit. lxx; *X. cinctus*, India, FAUVEL, p. 56, Rev. Ent. franc. xxiii : **n. spp.**
- Xerophygus ocularis*, Sumatra, FAUVEL, p. 95, t. c. **n. sp.**
- Zyras forticornis*, *hastatus*, India, FAUVEL, p. 64, t. c.; *Z. plasoni*, Australia, BERNHAUER, p. 240, Stettin Ent. Zeit. lxx : **n. spp.**

PSELAPHIDÆ.

[Cf. BROUN (184), DODERO (396, 397), FAUCONNET & VITURAT (480), GANGLBAUER (581), HOLDHAUS (695), MÜLLER (972), NORMAND (982), PEYERIMHOFF (1042, 1043), PIC (1071, 1077), RAFFRAY (1114), REITTER (1147), SCHATZMAYR (1223), Wasmann (1485).]

RAFFRAY gives a catalogue and genera of the family, as well as a large number of new species; of the 18 tribes 5 are new, and the name *Bryaxini* gives place to *Brachyglutini*. The synonymy is not given by the Recorder below except when new nomenclature is involved. Ann. Soc. ent. France 1903 and 1904.

Termitophilous *Pselaphidæ*, Wasmann, pp. 3–5, Jägerskiöld exp., No. 13. The sexual characters of *Bythinus*, DODERO, pp. 466–468, Ann. Mus. Genova xli.

Achillia convexiceps, p. 135, *picea*, *cordicollis*, p. 136, *clavata*, *quadratriceps*, p. 137, *latifrons*, *blanchardi*, p. 138, *elfridæ*, *brevicornis*, p. 139, Chile, RAFFRAY, Ann. Soc. ent. France 1905, **n. spp.**

Adiastulus **n. g.** for *Oxarthrius ophthalmicus*, RAFFRAY, p. 638, Ann. Soc. ent. France 1904.

Amauronyx barnevillei=(*Euplectus guillebeaudi* Xamb.), NORMAND, p. 200, Bull. Soc. ent. France 1900.

A. bedeli, Tunis, NORMAND, p. 213, Abeille xxx, **n. sp.**

Amaurops pinkeri, Mt. Adamello, GANGLBAUER, p. 195, Munchen. Kol. Zeitschr. ii, **n. sp.**

Anasis impunctata, Sumatra, RAFFRAY, p. 178, Ann. Soc. ent. France 1904, **n. sp.**

Anasopsis **n. g.** for New Caledonian *Anasis*, RAFFRAY, p. 179, t. c.

Ancystrocerus carinatus, Sumatra, RAFFRAY, p. 383, t. c. **n. sp.**

Apharina nodula, p. 311, *armata*, p. 312, Sumatra, RAFFRAY, t. c. **n. spp.**

Aploderina **n. g.** near *Hamotus*, *A. sulcicornis* **n. sp.**, Bolivia, RAFFRAY, p. 386, t. c.

Aporhæus **n. g.** p. 593, *A. pubescens* **n. sp.**, Bolivia, p. 594, RAFFRAY, Ann. Soc. ent. France 1903.

Arhytodes brevicornis, *brasiliensis*, S. America, RAFFRAY, p. 433, Ann. Soc. ent. France 1904, **n. spp.**

- Arthmius pedestrianus*, Mexico, p. 16, *transversalis*, *labiatus*, Brazil, p. 17, RAFFRAY, t. c. **n. spp.**
- Asymoplectus flagellatus*, S. Africa, RAFFRAY, p. 538, Ann. Soc. ent. France 1903, **n. sp.**
- Atenisodus n. g.* near *Comatopselaphus*, *A. macrophthalmus n. sp.*, Sumatra, RAFFRAY, p. 121, Ann. Soc. ent. France 1904.
- Balega dentata*, Mexico, RAFFRAY, p. 511, Ann. Soc. ent. France 1903, **n. sp.**
- Batoctenus dimidiatus*, Bolivia, *incertus*, Amazons, RAFFRAY, p. 39, Ann. Soc. ent. France 1904, **n. spp.**
- Batraxis tumorosa*, p. 118, Sumatra, *indica*, India, *parvispina*, Sumatra, p. 119, *obesa*, Philippines, p. 120, RAFFRAY, t. c. **n. spp.**
- Batribolbus n. g.* for part of *Eubatrissus*, RAFFRAY, p. 60, t. c.
- Batrisiella n. g.* for *Eubatrissus caviventris*, RAFFRAY, p. 59, t. c.
- Batrisinus elegans*, *gravidus*, Sumatra, RAFFRAY, p. 58, t. c. **n. spp.**
- Batrisodes obesus*, p. 23, *luteolus*, p. 24, *tricarinatus*, *tuberculatus*, p. 25, *acinosus*, p. 26, *ferinus*, p. 27, *tenuicornis*, *multiforus*, p. 28, *infundus*, p. 29, *patranus*, *nodosus*, p. 30, *indecorus*, *maivortius*, p. 31, *irritus*, p. 32, *demissus*, *sugax*, p. 33, Sumatra, *harmandi*, p. 34, *epistomalis*, p. 35, Japan, RAFFRAY, t. c. **n. spp.**
- Batrisomalus n. g.* for pt. of *Batrissus*, with *B. infossus n. sp.*, S. India, RAFFRAY, p. 60, t. c.
- Batrisoscenus siamensis*, Siam, *furcifer*, p. 43, *tumorosus*, *triangulatus*, p. 44, *truncatus*, *mitratus*, p. 45, *vulneratus*, *carinatus*, p. 46, *trigona*, *longipes*, p. 47, *cameratus*, p. 48, *fornicatus*, *binodosus*, p. 49, *calcaratus*, Sumatra, *saucipies*, China, p. 50, *deformipes*, p. 51, *cultripes*, p. 52, *major*, Sumatra, *sinensis*, China, p. 53, *indecorus*, Sumatra, *annamita*, Hué, p. 54, *quadraticeps*, p. 55, *immundus*, *capitatus*, p. 56, Sumatra, *carinicollis*, Botany bay, p. 57, RAFFRAY, t. c. **n. spp.**
- Biblomimus n. g.* *B. minutus n. sp.*, Antilles, RAFFRAY, p. 545, op. cit. 1903.
- Bibloplectus parviceps*, Cape G. H., RAFFRAY, p. 545, t. c. **n. sp.**
- Braxyda n. gen.* near *Achillia*, *B. hamata*, p. 145, *crassipes*, p. 146, **n. spp.**, Bolivia, RAFFRAY, op. cit. 1904.
- Brachygluta caligata*, var. n. *depressifrons*, NORMAND, p. 215, Abeille xxx.
- B. bicaudata*, Tunis, NORMAND, p. 215, t. c. **n. sp.**
- Bryaxina n. g.* near *Achillia*, p. 140, *B. torticornis*, *armiceps*, p. 142, *lucida*, *clavata*, *dimidiata*, p. 143, *schaufussi*, *foveifrons*, p. 144, *crassicornis*, p. 145, Brazil, **n. spp.**, RAFFRAY, Ann. Soc. ent. France 1904.
- Bryaxis* cf. *Bythinus*.—*B. sculptifrons* var. n. *roumanice*, *B. nodicornis* var. n. *montandoni*, RAFFRAY, p. 263, t. c.
- B. (Reichenbachia) mundicornis*, Bagdad, PIC, p. 49, Exchange xx, **n. sp.**
- Bunoderus n. g.* near *Brachygluta*, p. 151, *B. carinicollis*, Mexico, *longipilis*, Brazil, **n. spp.**, p. 152, RAFFRAY, Ann. Soc. ent. France 1904.
- Bythinoplectus acutangulus*, Grenada, p. 503, *transversiceps*, Brazil, p. 504, RAFFRAY, op. cit. 1903, **n. spp.**
- Bythinus* auctt. to be called *Bryaxis* Kug., and the *Bythinini* to be called *Tychini*, RAFFRAY, pp. 254 etc., op. cit. 1904.
- B. (Bythoxenus) guignardi*, Basses-Alpes, PEYERIMHOFF, p. 214, Bull. Soc. ent. France 1904; *B. noesskei*, Rhaetian Alps, GANGLBAUER, p. 194, Munchen. Kol. Zeitschr. ii; *B. trigonocerus*, Mte. Cavallo, HOLDHAUS, p. 227, Munchen. Kol. Zeitschr. ii; *B. heterocerus*, Dalmatia, MÜLLER, p. 208, Munchen. Kol. Zeitschr. ii; *B. (Bythoxenus) aymerichi*, Sardinia, DODERO, p. 53, Ann. Mus. Genova xli : **n. spp.**
- Centrophthalmosis n. g.* *C. inexpectus*, p. 376, *sulcatus*, *reitteri*, p. 377, **n. spp.**, Africa, RAFFRAY, Ann. Soc. ent. France 1904.
- Centrophthalmus guineensis*, *abyssinicus*, p. 373, Africa, *birmanus*, Burma, *sinensis*, Mong-po, p. 374, *papuanus*, Dorey, *angustipalpus*, Java, *bicarinatus*, Gaboon, p. 375, RAFFRAY, t. c. **n. spp.**

- Cercoceroides simplex, tuberculatus*, Brazil, RAFFRAY, p. 410, t. c. **n. spp.**
Cercoceropsis n. g. near *Cercoceroides*, *C. longipes n. sp.*, Brazil, RAFFRAY, p. 387, t. c.
Cercocerulus n. g. for *Phalepsus hirsutus*, Schauf., RAFFRAY, p. 411, t. c.
Chenniopsis n. g. p. 338, *C. madecassa n. sp.*, Madagascar, p. 339, RAFFRAY, t. c.
Claviger montandoni, Roumania, RAFFRAY, p. 457, t. c. **n. sp.**
Cliarthrus semirugosus, South Africa, RAFFRAY, p. 18, t. c. **n. sp.**
Comatopselaphus parcepunctatus, Sumatra, RAFFRAY, p. 120, t. c. **n. sp.**
Cryptorhinula xybaridoides, Brazil, RAFFRAY, p. 132, t. c. **n. sp.**
Ctenicellus n. g., p. 344, *C. major n. sp.*, Australia, p. 345, RAFFRAY, t. c.
Ctenisomimus n. g. for *Sognorus oneili*, RAFFRAY, p. 341, t. c.
Ctenisophus validicornis, Sumatra, *bowringi*, Siam, p. 343, *irregularis*, Sumatra, p. 344, RAFFRAY, t. c. **n. sp.**
Ctenistes vaulogeri, Tunis, PIC, p. 89, Echange xx; *C. crassicornis*, Burma, RAFFRAY, p. 340, Ann. Soc. ent. France 1904, **n. sp.**
Curculionellus hirtus, Sumatra, RAFFRAY, p. 322, t. c. **n. sp.**
Cyathiger gracilis, p. 305, *patruelis*, *nodicornis*, p. 306, *truncatus*, p. 307, Sumatra, RAFFRAY, t. c. **n. spp.**
Cyrtoplectus subg. n. for *Euplectus sulciventris*, NORMAND, p. 200, Bull. Soc. ent. France 1904.
Dalmodes gracilipes, Brazil, RAFFRAY, p. 270, Ann. Soc. ent. France 1904, **n. spp.**
Decarthron bicolor, Chile, *hetschkoi*, Brazil, p. 187, *sulcipes*, Bolivia, *tritolum*, Brazil, p. 188, *arthriticum*, Mexico, *insulare*, Grenada, p. 189, *quadraticeps*, Mexico, *planiceps*, Colombia, p. 190, *schmitti*, Mexico, p. 191, *spinosum*, Grenada, *vulneratum*, Mexico, p. 192, *brasilianum*, *minutum*, p. 193, Brazil, *tomentosum*, Colombia, *schaufussi*, Amazons, *planifrons*, Mexico, p. 194, *longicorne*, Amazons, *frontale*, Colombia, p. 195, RAFFRAY, t. c. **n. spp.**
Desimia caviceps, S. Africa, RAFFRAY, p. 346, t. c.; *D. ferruginea*, Tunis, NORMAND, p. 219, Abeille xxx : **n. spp.**
Diaposis n. g. for *Batrisus carinicornis* Raffr., RAFFRAY, p. 38, Ann. Soc. ent. France 1904.
Diaugis n. g. near *Batrisoschema*, p. 14, *D. granulosa n. sp.*, Sumatra, p. 15, RAFFRAY, t. c.
Didymoprora semipunctata, Queensland, RAFFRAY, p. 384, t. c. **n. sp.**
Drasinus n. g. near *Decarthron*, *D. binodulus n. sp.*, Mexico, RAFFRAY, p. 148, t. c.
Ectopocerus n. g. for *Decarthron verticicornis* Reitt., RAFFRAY, p. 149, t. c.
Eleusomatus, p. 638, op. cit. 1904, the following is called *Eleusomatus*.
Eleusoptamus n. g. for *Euplectus allocephalus*, Broun, RAFFRAY, p. 548, op. cit. 1903.
Enoptostomus crassicornis, Sumatra, RAFFRAY, p. 347, op. cit. 1904, **n. sp.**
Ephimida subnitida, Grenada, RAFFRAY, p. 312, t. c. **n. sp.**
Ephymata n. g. for *Bryaxis micronata* Raffr., RAFFRAY, p. 149, t. c.
Eremomus n. g. near *Brachygluta*, *E. obesus*, Bolivia, p. 177, *crassicornis*, Para, p. 178, **n. spp.**, RAFFRAY, t. c.
Euphalepsus tricarinatus, p. 61, *fasciculatus*, p. 62, Brazil, *dentipes*, N. America, p. 63, *tibialis*, Amazons, p. 64, RAFFRAY, t. c.
Eupines minima, Australia, p. 123, *E. (Byraxis) longiceps*, New Zealand, p. 124, RAFFRAY, t. c. **n. spp.**
Euplectus, cf. *Cyrtoplectus*.
E. crassus, pici, p. 210 with var. *scillarum*, p. 211, *fedjensis*, p. 212, Tunis, NORMAND, Abeille xxx; *E. caviceps*, p. 48, *sulciceps*, p. 49, New Zealand, BROUN, Ann. Nat. Hist. xiv; *E. schmitti*, p. 540, *infossus*, p. 541, N. America, *exiguus*, *illepidus*, Antilles, p. 542, RAFFRAY, Ann. Soc. ent. France 1903 : **n. spp.**

- Eupsenius gracilis*, Antilles, RAFFRAY, p. 197, op. cit. 1904, **n. sp.**
Eurhexius sexpunctatus, *longicornis*, p. 589, *megacephalus*, p. 590, *quadri-foveatus*, *laevis*, *subacuminatus*, p. 591, *octopunctatus*, *reitteri*, p. 592, *bicolor*, p. 593, Brazil, RAFFRAY, op. cit. 1903, **n. spp.**
Euteleia **n. g.** near *Decarthron*, *E. lewisi*, p. 183, *trifoveata*, Brazil, *nodosa*, Mexico, p. 184, **n. spp.**, RAFFRAY, op. cit. 1904.
Eutyphlus schmitti, Pennsylvania, RAFFRAY, p. 546, op. cit. 1903, **n. sp.**
Exallus **n. g.** for part of *Oecarthrius*, RAFFRAY, p. 18, op. cit. 1904.
Filiger validus, p. 310, *opacus*, p. 311, Sumatra, RAFFRAY, t. c. **n. spp.**
Fustiger smithi, St. Vincent, RAFFRAY, p. 455, t. c. **n. sp.**
Fustigeropsis simplex, S. Africa, RAFFRAY, p. 455, t. c. **n. sp.**
Globa laevis, Bolivia, RAFFRAY, p. 122, t. c. **n. sp.**
Golasa **n. g.** p. 494, for *Sagola microcephala* Reitt., RAFFRAY, op. cit. 1903.
Hamotoides nigropilosus, p. 407, Pará, *hirtus*, p. 408, Grenada, RAFFRAY, op. cit. 1904, **n. spp.**
Hamotus sternalis, p. 389, *boliviensis*, p. 390, Bolivia, *globulifer*, Brazil, p. 392, *tibialis*, Mexico, *punctipennis*, Colombia, p. 393, *vesiculifer*, Venezuela, p. 394, *bulbifer*, Colombia, p. 395, *letus*, Paraguay, p. 397, *cavicornis*, Guatemala, *rugosus*, p. 398, *bicolor*, *fauveli*, p. 399, *sulcipalpus*, Bolivia, *grouvellei*, p. 400, *simplex*, p. 401, Brazil, *soror*, Venezuela, p. 403, *decipiens*, *longepilosus*, Colombia, p. 404, *longiceps*, Brazil, p. 405, RAFFRAY, t. c. **n. spp.**
Hapochæus **n. g.** near *Batrisoschema*, p. 13, *H. granosus* **n. sp.**, Sumatra, p. 14, RAFFRAY, t. c.
Harmomima **n. g.** near *Batrybraxis*, *H. grandiceps*, p. 269, *impressicollis*, p. 270, Bolivia, **n. spp.**, RAFFRAY, t. c.
Itamus **n. g.** near *Decarthron*, *I. laticeps* **n. sp.**, Brazil, RAFFRAY, p. 196, t. c.
Iteticus **n. g.** for part of *Batrisodes* etc., RAFFRAY, p. 19, t. c.
Jubus brevis, Bolivia, *gracilicornis*, Mexico, p. 510, *clavatus*, Grenada, p. 511, RAFFRAY, op. cit. 1903, **n. spp.**
Labomimus harmandi, India, RAFFRAY, p. 382, op. cit. 1904, **n. sp.**
Macharites glabratus, found with *Ponera*, CHITTY, p. xl, P. ent. Soc. London 1904.
Macropectus tasmanicus, Tasmania, RAFFRAY, p. 544, Ann. Soc. ent. France 1903, **n. sp.**
Melba grenadensis, Antilles, p. 535, *dentipes*, N. America, p. 536, *quadri-foveata*, St. Thomas, p. 537, RAFFRAY, t. c. **n. spp.**
Nenemeca **n. g.** near *Batrisus*, *N. bidentata* **n. sp.**, Sumatra, RAFFRAY, p. 37, op. cit. 1904.
Methorius **n. g.** p. 537 for *Periplectus bicolor*, RAFFRAY, op. cit. 1903.
Metopias carinipes, Bolivia, RAFFRAY, p. 106, op. cit. 1904, **n. sp.**
Mina nasuta, Sumatra, RAFFRAY, p. 59, t. c. **n. sp.**
Mirus lavagnei, Montpellier, DODERO, p. 40, Bull. Soc. ent. France 1904, **n. sp.**
Mitona **n. g.** near *Xybaris*, *M. quadraticeps*, p. 129, *bisulciceps*, Bolivia, *mnizechi*, Colombia, p. 130, *nigra*, Venezuela, p. 131, **n. spp.**, RAFFRAY, Ann. Soc. ent. France 1904.
Nodulina **n. g.** for *Bryaxis convexa* Schauf., RAFFRAY, p. 153, t. c.
Odontalgus gracilis, *validus*, Sumatra, RAFFRAY, p. 348, t. c. **n. spp.**
Omotimus **n. g.** for *Trimidiolytes sulcifrons*, RAFFRAY, p. 534, op. cit. 1903.
Ophelius **n. g.** near *Batrisopsis*, *O. simplex* **n. sp.**, Sumatra, RAFFRAY, p. 36, op. cit. 1904.
Patreus **n. g.** near *Sagola*, for *P. lewisi* **n. sp.**, New Zealand, BROUX, p. 47, Ann. Nat. Hist. xiv.
Phalepsus vulgaris, *cavicornis*, S. America, RAFFRAY, p. 416, Ann. Soc. ent. France 1904, **n. spp.**

- Phamismus velutinus*, Bolivia, RAFFRAY, p. 512, op. cit. 1903, **n. sp.**
Phoberus n. g. near *Reichenbachia*, *P. armatus n. sp.*, Bolivia, RAFFRAY, p. 176, op. cit. 1904.
Prosagola n. g. p. 494, for *Sagola elfrida* Reitt., RAFFRAY, op. cit. 1903.
Pseudaphus globiventris, Sicily, REITER, p. 46, Wien. ent. Zeit. xxiii ; *P. pubescens*, Annam, *vestitus*, Sumatra, *squamosus*, Cape Town, RAFFRAY, p. 321, Ann. Soc. ent. France 1904 : **n. spp.**
Pselaptus politissimus, Brazil, *sternalis*, Grenada, RAFFRAY, p. 128, op. cit. 1905, **n. spp.**
Pseudohamotus planiceps, Brazil, RAFFRAY, p. 409, op. cit. 1904, **n. sp.**
Pseudophanias elegans, robustus, p. 413, Sumatra, *punctatus*, Singapore, p. 414, *puberulus*, Penang, *clavatus*, Sumatra, p. 415, RAFFRAY, t. c. **n. spp.**
Pyxidicerus lævipennis, Sumatra, *laticollis*, Singapore, RAFFRAY, p. 501, op. cit. 1903.
Radamellus n. g. for *Radama spinipennis*, RAFFRAY, p. 456, op. cit. 1904.
Raffrayia opaca, S. Africa, RAFFRAY, p. 595, op. cit. 1903, **n. sp.**
Reichenbachia addahensis, W. Africa, *nava*, p. 156, *breviventris*, Sumatra, *infelix*, W. Africa, p. 157, *bengalensis*, India, *grouvellei*, Mexico, p. 158, *nitella*, Sumatra, *boliviensis*, Yuracarís, p. 159, *pygidialis*, Missouri, *cicatricosa*, Sumatra, p. 160, *muscorum*, Penang, *curvipes*, Brazil, p. 161, *arabica*, Hedjaz, *irrita*, p. 162, *luteola*, p. 163, *chevolati*, *pilosa*, p. 164, *illepida*, Brazil, *fasciculata*, p. 165, *compressipes*, p. 166, Sumatra, *orientalis*, W. Asia, p. 167, *maroccana*, Morocco, *grenadensis*, p. 168, *vincentiana*, Antilles, *cultrata*, Sumatra, p. 169, *falsa*, Yucatan, p. 170, *globulosa*, Brazil, p. 171, *chiricahuensis*, Arizona, p. 172, *mexicana*, Mexico, *oberthuri*, Honda, p. 173, *appendiculata*, Mexico, p. 174, *obnubila*, Yucatan, *immodica*, Colombia, p. 175, RAFFRAY, op. cit. 1904 ; *R. infossa*, Sumatra, RAFFRAY, p. 635, t. c. : **n. sp.**
Rybaxis villosa, Tonkin, *convexa*, Sumatra, p. 181, *bicarinata*, Queensland, p. 182, RAFFRAY, t. c. **n. spp.**
Salagosa n. g. p. 494, for *Sagola brevipennis* Reitt., RAFFRAY, op. cit. 1903.
Sathyes gracilis, Sumatra, RAFFRAY, p. 65, op. cit. 1904, **n. sp.**
Scalenarthrus subcarinatus, Yucatan, *schaufussi*, Brazil, p. 125, *simplex*, Bolivia, *obliquus*, Mexico, p. 126, *clavatus*, *pectinicornis*, Antilles, p. 127, RAFFRAY, t. c. **n. spp.**
Schaufussia nasuta, S. Australia, RAFFRAY, p. 385, t. c. **n. sp.**
Strombopsis n. g. near *Xybarida*, p. 133, *X. breviventris n. sp.*, Brazil, RAFFRAY, t. c.
Subulipalpus myrmecophilus, Hong-Kong, RAFFRAY, p. 383, t. c. **n. sp.**
Tanypleurus megacephalus, Sumatra, RAFFRAY, p. 271, t. c. **n. sp.**
Thesiastes liliputanus, Granada, RAFFRAY, p. 543, op. cit. 1903, **n. sp.**
Thysdarius n. n. for *Thysdrus* Fairm., FAIRMAIRE, p. 117, Bull. Soc. ent. France 1904.
Tmesiphorus punctatus, Assinia, p. 378, *arrowi*, Adelaide Riv., p. 379, *bispina*, *squamosus*, p. 380, *aspericollis*, p. 381, Sumatra, RAFFRAY, Ann. Soc. ent. France 1904, **n. spp.**
Trimium longiventris, Transcaucasus, RAFFRAY, p. 534, op. cit. 1903, **n. sp.**
Triomicrus cavernosus, humilis, China, RAFFRAY, p. 147, op. cit. 1904, **n. spp.**
Tychus, study, synonymical and varietal, PEYERIMHOFF, Abeille xxx, pp. 169–179, *T. bryaxioides* var. *n. raffrayi*, p. 173 ; *T. niger* and *bryaxioides*, variation, *bryaxioides* var. *n. poupiliieri*, RAFFRAY, pp. 265–267, Ann. Soc. ent. France 1904.
T. bispina, Tangier, p. 267, *sternalis*, Pennsylvania, p. 268, RAFFRAY, t. c. **n. spp.**
Tyraphus vestitus, Sumatra, RAFFRAY, p. 636, t. c. **n. sp.**
Tyrus tillyi, Carinthia, SCHATZMAYR, p. 213, Munchen. Kol. Zeitschr. ii, **n. sp.**

- Xybarida punctulum*, Brazil, RAFFRAY, p. 133, Ann. Soc. ent. France 1904, **n. sp.**
Xybaris quadraticeps, p. 131, *atomaria*, p. 132, Brazil, RAFFRAY, t. c. **n. spp.**
Zethopsus puncticeps, Sumatra, RAFFRAY, p. 502, op. cit. 1903, **n. spp.**

PAUSSIDÆ.

[Cf. PÉRINGUEY (1028), WASMANN (1481).]

- Paussidæ*, remarks on phylogeny and biology, also new varr. besides the spp. mentioned below, WASMANN, Notes Leyden Mus. xxv, pp. 1-82.
Hylotorus sebakuanus, Rhodesia, PÉRINGUEY, p. 205, Ann. S. African Mus. iii, **n. sp.**
Paussus faviéri, relations with ants, NORMAND, p. 79, Echange xx.
P. cerambyx, Congo, p. 51, pl. iv, f. 3, *bicornis*, Cameroons, f. 2, p. 52, *semicucullatus* (Brauns), Port Elizabeth, p. 53, *cardoni*, p. 57, pl. v, f. 6, *assmuthi*, p. 58, pl. vi, f. 4, *seriesetosus*, f. 3, p. 59, *quadratidens*, p. 60, *aureofimbriatus*, p. 61, pl. vi, f. 5, India, *spiniceps*, p. 63, f. 6, Sierra Leone, *pandamanus*, f. 6, p. 64, *nigrita*, p. 65, Java, WASMANN, Notes Leyden Mus. xxv, **n. spp.**
Platyhopalus cardoni, India, p. 19, *paussoides*, Bootang, p. 20, pl. iii, f. 3, WASMANN, t. c. **n. spp.**
Pleuropterus oberthuri, p. 9, *brevicornis*, p. 10, Africa, WASMANN, t. c. **n. spp.**

SCYDMENIDÆ.

[Cf. FAUCONNET & VITURAT (480), REITTER (1151, 1152).]

- Euconnus solarii*, Valle Lucano, REITTER, p. 152, Wien. ent. Zeit. xxiii, **n. sp.**
Neuraphes bescidicus, Silesia, REITTER, p. 147, t. c. **n. sp.**
Stenichnus pilosissimus, Valle Lucano, REITTER, p. 151, t. c. **n. sp.**

SILPHIDÆ.

[Cf. ABEILLE (4), CHOBOUT (271), CSIKI (328), DODERO (397), FLEISCHER (513), MAYET (926), MÜLLER (970, 971), PEYERIMHOFF (1041, 1042), POPPIUS (1094), PORTEVIN (1100), REITTER (1142, 1151, 1152, 1155), WASMANN (1482), ZOUFAL (1549).]

REITTER figures Bosnian and Herzegowinian Cave *Silphidæ*, pl. 1, p. 146, Wien. ent. Zeit. xxiii.

- Agathidium levigatum*, Valle Lucano, REITTER, p. 154, t. c. **n. sp.**
Anemadus leonhardi, Herzegowina, REITTER, p. 154, t. c. **n. sp.**
Antroherpon loreki = (*kraussi* Müll.), REITTER, p. 84, t. c.
A. loreki, cavern in Herzegowina, ZOUFAL, p. 20, Wien. ent. Zeit. xxiii; *A. kraussi*, Herzegowina, MÜLLER, p. 38, München. Kol. Zeitschr. ii, **n. spp.**
Apholexionus nudus var. *n. longicollis*, REITTER, p. 255, Wien. ent. Zeit. xxiii.
A. (Haplotropidius) subg. n. p. 89, *pubescens*, p. 78, pl. i, f. 1, *taxi*, p. 83, f. 2, Dalmatian caverns, MÜLLER, SB. Ak. Wien cxii, Abt. i, **n. spp.**
Bathyscia destefanii, valid, list of Italian *B.*, DODERO, pp. 121-123, Natural. Sicil. xvii; *B. champsauri*, p. 215, *foveicollis*, p. 216, subspp. *n.*, PEYERIMHOFF, Bull. Soc. ent. France 1904; *B. neumanni*, characters, REITTER, p. 260, Wien. ent. Zeit. xxiii.
B. nemausica, Nîmes, CHOBOUT, p. 76, Bull. Soc. Nîmes xxxi; *B. jeanneli*, p. 242, *elguetæ*, p. 243, Basses Pyrénées, ABEILLE, Bull. Soc. ent. France 1904; *B. (Aphaobius) fabianii*, Venetia, p. 55, *raveli*, Capri, p. 57, *losticæ*, Sardinia, p. 58, DODERO, Ann. Mus. Genova xli; *B. serbica*,

- Servia, MÜLLER, p. 41, Munchen. Kol. Zeitschr. ii; *B. (Aphaobius) eurycnemis*, cavern Herzegowina, REITTER, p. 26, Wien. ent. Zeit. xxiii : **n. spp.**
- Blatrodromus* **subgen. n.**, cf. *Pholeuonopsis*.
- Choleva pallida*, E. Siberia, POPPIUS, p. 2, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Delios* **n. g.** *Liodini*, *D. bouvieri* **n. sp.**, Darjeeling, PORTEVIN, p. 335, Bull. Mus. Paris ix.
- Diaprysius mazaurici*, cavern, Gard, MAYET, p. 31, Bull. Soc. Nimes xxxi; *D. serullazi*, Ardèche. PEYERIMHOFF, p. 185, Bull. Soc. ent. France 1904 : **n. spp.**
- Dissochaetus geayi*, French Guiana, PORTEVIN, p. 329, Bull. Mus. Paris ix, **n. sp.**
- Eusilpha hypocrita*, Mou-pin, PORTEVIN, p. 332, t. c. **n. sp.**
- Hadrambe* Thoms. is syn. of *Ecanus* Steph., BEDEL, p. 235, Abeille xxx.
- Haplotropidius* **subgen. n.**, cf. *Apholeuonus*.
- Liodes*, habits, with larvæ noticed, FLEISCHER, pp. 251–254, Wien. ent. Zeit. xxiii, *L. curvipes* (= *macropus* Rye) characters, var. *n. ruficornis*, FLEISCHER, p. 162, t. c.; *L. ovalis, nigricollis*, nov., FLEISCHER, p. 166, t. c.; *L. scita*, cf. *Trichosphærule*.
- L. chaffanjonii*, Mongolia, *contracta*, Darjeeling, PORTEVIN, p. 335, Bull. Mus. Paris ix, **n. spp.**
- Loricaster cribripennis*, France, REITTER, p. 147, Wien. ent. Zeit. xxiii, **n. sp.**
- Necrophorus vespilloides* var. *n. lateralis*, PORTEVIN, p. 330, Bull. Mus. Paris ix.
- N. quadraticollis*, Mou-pin, id., l. c. **n. sp.**
- Philas* **n. g.** for *Silpha truncata* Say, PORTEVIN, p. 331, t. c.
- Pholeuon (Parapholeuon) hungaricum*, Szohodol, CSIKI, p. 565, Ann. Mus. Hungar. ii, **n. sp.**
- Pholeuonopsis (Blattodromus* subg. *n.*) *herculeana*, Bosnia, REITTER, p. 153, Wien. ent. Zeit. xxiii, **n. sp.**
- Pteroloma harmandi*, Darjeeling, PORTEVIN, p. 334, Bull. Mus. Paris ix, **n. sp.**
- Ptomaphagus bicolor*, Darjeeling, PORTEVIN, p. 329, t. c. **n. sp.**
- Scotocryptus*, notes, larva, WASMANN, Rev. Mus. Paulista vi, pp. 483–487.
- Silpha inæqualis* var. *n. rugulosa*, PORTEVIN, p. 333, Bull. Mus. Paris ix.
- Silphosoma* **n. g.** for *Silpha metallescens* Fairm., PORTEVIN, p. 333, t. c.
- Thanatophilus thoracicus* var. *n. davidi*, PORTEVIN, p. 331, t. c.
- Trichosphærule* subg. *n.* of *Liodes* for *scita* Er., FLEISCHER, p. 261, Wien. ent. Zeit. xxiii.

TRICHOPTERYGIDÆ.

- Ptenidium lævipenne*, East Pyrenees, ABEILLE, p. 100, Miscell. Ent. xii, **n. sp.**

SCAPHIDIIDÆ.

- Scaphidium matthewsi* **n. n.** for *unicolor* Matth., CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- Scaphosoma reitteri* **n. n.** for *læve* Guillb., CSIKI, p. 85, t. c.

HISTERIDÆ.

[Cf. DAVIS (352), LEWIS (880), REITTER (1144, 1152), SCHAEFFER (1220).]

Hister attacking caterpillars, DAVIS (352).

- Acritus nigricornis*, sexes, MÜLLER, p. 172, Wien. ent. Zeit. xxiii; *A. seminulum* and *nigricornis* as sexes, REITTER, p. 36, t. c.; *A. nigricornis* and *seminulum*, correction, GERHARDT, p. 368, Deutsche ent. Zeitschr. 1904.
- A. italicus*, Valle Lucano, REITTER, p. 155, Wien. ent. Zeit. xxiii, **n. sp.**
- Enicosoma* **n. g.** for *E. vespertinum* **n. sp.**, Brazil, LEWIS, p. 149, pl. vi, f. 5, Ann. Nat. Hist. xiv, **n. sp.**
- Eutidium lepidum*, Brazil, LEWIS, p. 138, t. c. **n. sp.**
- Gnathonecus*, synonymy, *G. schmidtii*, established, REITTER, p. 35, Wien. ent. Zeit. xxiii.
- Hister pachysoma*, characters, LEWIS, p. 146, Ann. Nat. Hist. xiv.
- H. belli*, India, p. 146, *walkeri*, Australia, p. 147, LEWIS, t. c. **n. spp.**
- Hololepta dux*, Cameroons, LEWIS, p. 138, t. c. **n. sp.**
- Lioderma intersectum*, Peru, LEWIS, p. 139, t. c. **n. sp.**
- Macrolister* **n. g.** for *Hister gigas* etc., LEWIS, p. 145, t. c.
- Niponius canalicollis*, f. 1, *parvulus*, f. 2, *andrewesi*, f. 3, pl. vi, LEWIS, t. c.
- N. striaticeps*, Borneo, p. 137, pl. vi, f. 4, id. t. c. **n. sp.**
- Omalodes mestino*, Peru, LEWIS, p. 144, **n. sp.**
- Orectoscelis humeralis*, pl. vi, fig. 6, LEWIS, t. c.
- Pachycrærus cylindricus*, description, LEWIS, p. 148, t. c.
- Pachylister* **n. g.** for *Hister caffer* etc., LEWIS, p. 145, t. c.
- Pachylomalus andrewesi*, India, LEWIS, p. 147, t. c. **n. sp.**
- Placodes brauni*, S. Africa, LEWIS, p. 142, t. c. **n. sp.**
- Plesius mouhoti*, *planulus*, *lævis*, redescribed, LEWIS, pp. 140, 141, t. c.
- Platylister sororius*, India, LEWIS, p. 142, t. c. **n. sp.**
- Platysoma capense* is *henningi* Sturm, *sculptum* Fähr, *punctulatum* Lew., LEWIS, p. 144, t. c.
- P. raptistriatum*, Java, LEWIS, p. 143, t. c. **n. sp.**
- Probolosternus termitophilus*, S. Africa, LEWIS, p. 148, t. c. **n. sp.**
- Saprinus politus* Brahm = (*pulcherrimus* Web.), BEDEL, p. 236, Abeille xxx; *S. lateristrius* var. *n. laterimargo*, REITTER, p. 32, Wien. ent. Zeit. xxiii.
- S. mimulus*, Astrakhan, p. 29, *syphax*, Algiers, p. 30, *duriculus*, Transcasian, p. 31, *refector*, Samarkand, p. 32, *netuschili*, Mongolia, *pseudolautus*, Transcaucasus, p. 33, *pseudognathonecus*, W. Caucasus, p. 34, REITTER, t. c.: *S. dichrous*, *flavopictus*, S. America, LEWIS, p. 150, Ann. Nat. Hist. xiv : **n. spp.**
- Stenotrophis cavifrons*, pl. vi, fig. 7, LEWIS, t. c.
- Teinotarsus latipes*, Old Calabar, LEWIS, p. 145, t. c. **n. sp.**
- Teretriosoma sexualis*, Texas, SCHAEFFER, p. 203, J. N. York Ent. Soc. xii, **n. sp.**

NITIDULIDÆ.

[Cf. GROUVELLE (639), POPPIUS (1094), SCHAEFFER (1220).]

- Camptodes texanus*, Brownsville, SCHAEFFER, p. 203, J. N. York Ent. Soc. xii, **n. sp.**
- Epuræa opacula*, E. Siberia, POPPIUS, p. 3, Ofv. Finska Forh. xlv, No. 16, p. 5, **n. sp.**
- Glischrochilus olivieri*, synonymy, BEDEL, p. 236, Abeille 1904.
- Meligethes atomus*, Congo, GROUVELLE, p. 181, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Pocadius ferrugineus* and *striatus*, synonymy, BEDEL, p. 236, Abeille 1904.

COLYDIDÆ.

[Cf. GROUVELLE (639).]

- Caprodes ater*, Congo, GROUVELLE, p. 181, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Cerylon ovale, Gaboon, GROUVELLE, p. 182, t. c. **n. sp.**

Endophlæus markovichianus Pill. (= *spinosulus* Latr.), BEDEL, p. 236, Abeille xxx.

Minthea rugicollis Walk. (as *Ditoma*) = (*similatra* Pasc. = *Eulachus hispidus* Blackb. = *Lyctopholis foveicollis* Reitt.), ARROW, pp. 35, 36, Ent. Mag. xl.

RHYSODIDÆ.

Rhysodes ichthycephalus, abbreviatus, p. 79, *mirabilis*, pl. iv, fig. 7, p. 80, Queensland, *trichostemus*, p. 81, Victoria and Tasmania, *planatus*, Victoria, p. 82, LEA, P. Linn. Soc. N. S. Wales xxix, **n. spp.**

CUCUJIDÆ.

[Cf. GROUVELLE (639), LEA (864), SCHAEFFER (1220).]

Dryocora walkeri, Tasmania, LEA, p. 87, pl. iv, fig. 5, P. Linn. Soc. N. S. Wales xxix, **n. sp.**

Læmophlæus diemenensis ♀, pl. iv, fig. 14, *frenchi*, fig. 4; LEA, p. 87, t. c.

L. notabilis, Congo, GROUVELLE, p. 183, Ann. Soc. ent. Belgique xlviii;

L. subopacus, W. Australia, p. 82, *ubiquitosus*, Tasmania, p. 83, *pilosus*,

p. 84, *testaceo-rufus*, W. Australia, *eucalypti*, Tasmania, p. 85, *pallidus*,

Australia, p. 86, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**

Læmotmetus rhizophagoides Walk. (as *Trogossita*) = (*ferrugineus* Gerst. = *Oryzæcus cathartoides* Reitt. = *Asana rhizophagoides* Oll.), ARROW, p. 36, Ent. Mag. xl.

Silvanus proximus, p. 183, *frater*, p. 184, West Africa, GROUVELLE, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Platysus integricollis, larva, LEA, p. 88, pl. iv, fig. 6, P. Linn. Soc. N. S. Wales xxix.

Rhinomelus texanus, Brownsville, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii : **n. sp.**

CRYPTOPHAGIDÆ.

[Cf. GABRIEL (577), SCHAEFFER (1220).]

Atomaria; mode of distinguishing species, table, GABRIEL, Zeitschr. Ent. Breslau xxix, pp. 85–89; *A. proluxa* and *pulchra*, characters, GERHARDT, p. 83, Zeitschr. Ent. Breslau xxix.

Loberus ornatus, Texas, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii : **n. sp.**

Tomarus chamæropis, Texas, SCHAEFFER, p. 202, t. c. **n. sp.**

LATHRIDIIDÆ.

[Cf. POPPIUS (1095), REITTER (1152), SEMENOW (1278).]

Corticaria solarii, Valle Lucano, REITTER, p. 156, Wien. ent. Zeit. xxiii :

C. dentiventris, E. Siberia, POPPIUS, p. 84, Medd. Soc. Faun. Fenn. 1902/03 : **n. spp.**

Enicmus minutus and *anthracinus*, distinguished, REITTER, pp. 43–45, 80, Wien. ent. Zeit. xxiii.

Lar subg. n. of *Lathridius* for *L. bergrothi*, SEMENOW, p. 314, Rev. Russe Ent. 1904.

Lathridius subbrevis Motsch., characters, POPPIUS, p. 89, Medd. Soc. Faun. Fenn. 1902/03.

Lathridius semenowi, p. 87, *lenensis*, p. 91, East Siberia, POPPIUS, t. c. ; *L. poppiusi*, E. Siberia, SEMENOW, p. 289, Rev. Russe Ent. 1904 : **n. spp.**

MYCETOPHAGIDÆ.

[Cf. GROUVELLE (639), REITTER (1153).]

Lithargus trimaculatus, p. 184, *variegatus*, p. 185, Congo, GROUVELLE, Ann. Soc. ent. Belgique xlviii, **n. spp.***Mycetophagus irroratus* = (*tschitscherini* Reitt.), SEMENOW, p. 305, Rev. Russe Ent. 1904; *M. decempunctatus* var. *n. syriacus*, REITTER, p. 165, Wien. ent. Zeit. xxiii.*M. ramosus*, Caucasus, id. p. 166, t. c., **n. sp.***Typhæa stercorea* L. 1758 = (*fumata* L. 1761), BEDEL, p. 235, Abeille xxx.

THORICTIDÆ.

Thorictus peyerimhoffi, Arabia, CHABAUT, p. 243, Bull. Soc. ent. France 1904; *T. kaznakovi*, E. Buchara, SCHMIDT, p. 389, Annuaire Mus. St. Petersb. viii : **n. spp.**

DERMESTIDÆ.

[Cf. GANGLBAUER (580), PIC (1060, 1068, 1075).]

The European *Dermestidæ*, GANGLBAUER (580).*Attagenus biskrensis*, Algeria, PIC, p. 2, Echange 1904; *A. longipennis*, Kashgar, PIC, p. 33, t. c. : **n. spp.***Dermestes erichsoni* **n. n.** for *tessellatus* Er., GANGLBAUER, p. 16, Käf. Mitteleur. iv.*Entomotrogus* **n. g.** for *Trogoderma megatomoides* Reitt., GANGLBAUER, p. 33, t. c.*Ignotus ænigmaticus*, figure, Ent. News Philad. xv, p. 36.*Telopes brunnescens*, Amanus, PIC, p. 73, Echange xx, **n. sp.**

BYRRHIDÆ.

[Cf. BROUN (184), GANGLBAUER (580, 581), POPPIUS (1094).]

The *Byrrhidæ* of Europe, *Nosodendron*, a distinct family, *Nosodendridæ*, GANGLBAUER (580).*Byrrhus picipes judicarius* subsp. *n.*, GANGLBAUER, p. 200, Munchen. Kol. Zeitschr. ii.*Curimus vestitus*, New Zealand, BROUN, p. 49, Ann. Nat. Hist. xiv, **n. sp.***Simplocaria nivalis*, Tyrol, GANGLBAUER, p. 61, Käf. Mitteleur. iv; *S. nivalis*, Mt. Adamello, GANGLBAUER, p. 188, Munchen. Kol. Zeitschr. ii; *S. obscuripes*, E. Siberia, p. 5, *palmeni*, p. 6, *arctica*, p. 7, N. Russia, *nebulosa*, E. Siberia, p. 9, POPPIUS, Ofv. Finska Forh. xlvi, No. 16, **n. spp.**

PARNIDÆ and HETERO CERIDÆ.

[Cf. GANGLBAUER (580, 582), GROUVELLE (640), SCHAEFFER (1220).]

Parnidæ to be called *Dryopidæ*, GANGLBAUER, p. 95, Käf. Mitteleur. iv.*Esolus solarii*, Genoa, GANGLBAUER, p. 116, t. c. **n. sp.***Latelmis subopaca*, Val Pesio, GANGLBAUER, p. 118, t. c. **n. sp.***Riolus apfelbecki*, Servia, GANGLBAUER, p. 354, Munchen. Kol. Zeitschr. ii, **n. sp.**

- Throscinus schwarzii*, Texas, SCHAEFFER, p. 204, J. N. York Ent. Soc. xii, **n. sp.**
Heterocerus (Littorimus) conjungens, Bangkok, GROUVELLE, p. 83, Mission Pavie iii, **n. sp.**

PASSALIDÆ.

[Cf. ARROW (38), SHARP (1284), ZANG (1545, 1546).]

The stridulation of *Passalidæ*, ARROW, pp. 731-734, Tr. ent. Soc. London 1904.

Stridulation, *Passalidæ*, *Proculus*, SHARP, p. 273, Ent. Mag. xl.

Aceraius ; synonymy of the species, ZANG, p. 184, Tijdschr. Ent. xlvii.

Basilianus convexifrons, Assam, ZANG, p. 698, Zool. Anz. xxvii, **n. sp.**

Ophrygonius n. g. near *Aceraius*, p. 697, *O. quadrifer n. sp.*, Borneo, p. 699, ZANG, t. c.

Parapelopides n. g. near *Aceraius*, p. 694, *P. symmetricus sp. n.*, p. 695, Borneo, ZANG, t. c.

Passalus distinctus, hab. America, Africa, Madagascar, ZANG, p. 181, Tijdschr. Ent. xlvii.

Pelops triumphator, Moluccas, ZANG, p. 182, t. c.

LUCANIDÆ.

[Cf. BOILEAU (141, 142, 143), BROUN (184), MOLLENKAMP (954).]

The stridulation of *Lucanidæ*, ARROW, pp. 735-737, Tr. ent. Soc. London 1904.

Cyclommatus giraffa, montanellus, Kina Balu, MÖLLENKAMP, p. 372, Ins. Börse 1904, **n. spp.**

Dorcus (Eurytrachelus) brachycerus, Kashmir, BOILEAU, p. 27, Bull. Soc. ent. France 1904 ; *D. (Macrodorcus) rugosus*, Madura, BOILEAU, p. 39, t. c. : **n. spp.**

Eurytrachelus reichei and allies, MÖLLENKAMP, p. 402, Ins. Börse 1904.

Hemisodorcus axis, Sumatra, BOILEAU, p. 284, Naturaliste 1904, **n. sp.**

Hexarthrus deyrollei var. *n. rufipes*, BOILEAU, p. 277, t. c.

H. rollei, Kina Balu, MÖLLENKAMP, p. 403, Ins. Börse 1904, **n. sp.**

Homoderus? variegatus, Cameroons, BOILEAU, p. 277, Naturaliste 1904, **n. sp.**

Metopodontus felschei, W. Africa, MÖLLENKAMP, Ins. Börse 1904, p. 372 ; *M. mirabilis*, Usambara, *speciosus*, Nilgherry hills, BOILEAU, p. 278, Naturaliste 1904 : **n. spp.**

Mitophyllus curvidens, New Zealand, BROUN, p. 50, Ann. Nat. Hist. xiv, **n. sp.**

Odontolabis waterstradti var. *n. kinabaluensis*, MÖLLENKAMP, Ins. Börse 1904, p. 341, *gazella telodont*, p. 348.

O. instabilis, Sumatra, p. 347, *imperialis*, Kina Balu, p. 348, MÖLLENKAMP, t. c. **n. spp.**

Prismognathus lucidus, Sikkim, BOILEAU, p. 278, Naturaliste 1904, **n. sp.**

Prosopocelus boreli, Assam, *specularis*, Tanganyika, p. 284, *mordax*, Burma, p. 285, BOILEAU, t. c. ; *P. laticeps*, Himalaya, MÖLLENKAMP, p. 403, Ins. Börse 1904 : **n. spp.**

Sphenognathus bellicosus, spinifer, S. America, BOILEAU, p. 284, Naturaliste 1904, **n. spp.**

SCARABÆIDÆ.

Stridulation of the imago, ARROW, Tr. ent. Soc. London 1904, pp. 709–750, pl. xxxvi.

Coprini.

[Cf. ARROW (38), BLACKBURN (132, 133, 134), BOUCOMONT (159), FAIRMAIRE (473), FELSCHÉ & D'ORBIGNY (494), FRANÇOIS (539), KOLBE (830), LEA (864), MAYET (925), OHAUS (992), D'ORBIGNY (996, 997, 998), PÉRINGUEY (1028), REITTER (1152, 1155).]

Notes on classification, specially of the *Geotrupid* series, ARROW, Tr. ent. Soc. London 1904, pp. 738–749.

Ægidinus n. g. *Æ. brasiliensis* n. sp., Ega, ARROW, p. 739, t. c.

Ægidium asperatum = (*colombianum* Bates), ARROW, p. 738, t. c.

Allotrypes subg. n. cf. *Geotrypes*.

Ammæcius felscheanus, Algeria, REITTER, p. 255, Wien. ent. Zeit. xxiii, n. sp.

Anachalcos schulzi, E. Africa, KOLBE, p. 285, Berlin. ent. Zeitschr. xlix, n. sp.

Aphodiides, revision of Australian, BLACKBURN, pp. 149–181, P. Soc. Victoria xvii.

Aphodius rufus = (*moscoviticus* Sem.), SEMENOW, p. 37, Rev. Russe Ent. iv ; *A. breviciliatus* n. n. for *fimbriolatus* Reitt. nec. Mannh., POPPIUS, p. 366, Annuaire Mus. St. Petersb. viii ; *A. tunicatus* and *tomentosus*, SEMENOW, p. 305, Rev. Russe Ent. 1904.

A. (Esymus) cuniculorum, Nîmes, MAYET, p. 130, Bull. Soc. ent. France 1904 ; *A. andersoni*, p. 154, *suberosus*, p. 155, *insignior*, *baldiensis*, p. 156, Australia, BLACKBURN, P. Soc. Victoria xvii : n. spp.

Atænius moniliatus, p. 161, *koebeli*, p. 162, *imparilis*, p. 163, *sparsicollis*, *semicornutus*, p. 164, *tweedensis*, p. 165, *nudus*, *gibbus*, p. 166, *macilentus*, *spissus*, p. 167, *consors*, p. 168, *coloratus*, p. 169, *walkeri*, p. 170, Australia, BLACKBURN, t. c. n. spp.

Aulonocnemis, SCHAUFUSS in Ins. Börse xix, p. 130 (not seen by Recorder), described 4 n. spp. of this genus.

Bolboceræ, revision of Australian, BLACKBURN, P. Linn. Soc. N. S. Wales xxix, pp. 481–526.

B. macleayi, p. 500, *aratum*, p. 502, *leovilli*, p. 503, *tenax*, p. 507, *froggatti*, *truncatum*, p. 509, *clypeale*, p. 511, *basedovi*, p. 512, *mandibulare*, p. 513, *loweri*, p. 515, *nitidiceps*, p. 516, *lævipes*, p. 517, *subretusum*, p. 518, *nitens*, p. 519, *impressicolle*, p. 520, *obscurius*, p. 522, *carinatum*, p. 523, *pontiferum*, p. 525, Australia, BLACKBURN, t. c. n. spp.

Caccobius reticuliger, p. 255, *gananensis*, p. 256, *longipennis*, p. 258, Africa, D'ORBIGNY, Ann. Mus. Genova xli ; *C. lateralis*, p. 417, *setifer*, p. 420, *callosifrons*, p. 421, *uniseriæ*, p. 423, W. Africa, D'ORBIGNY, t. c. : n. spp.

Copris camerunus, Africa, FELSCHÉ, p. 402, Arkiv Zool. i, n. sp.

Diastellopalpus albrechtianus, p. 290, *zeuneri*, p. 291, Cameroons, KOLBE, Berlin. ent. Zeitschr. xlix, n. spp.

Diastellopalpus orbignyi, Rhodesia, PÉRINGUEY, p. 224, Ann. S. African Mus. iii, n. sp.

Enoplotrupes ; revision, BOUCOMONT, pp. 210–214, with *sinensis* var. n. *crassicornis*, p. 212, BOUCOMONT, Rev. Ent. franc. 1904.

Epirrhinus, *flagellatus* Fabr. = (*granulatus* Oliv.), BEDEL, p. 152, Abeille xxx.

Euparia olliffi, N. S. Wales, BLACKBURN, p. 171, P. Soc. Victoria xvii, n. sp.

Geotrupes ; table of subgenera, pp. 214–216, the Asiatic species, pp. 216–247,

- BOUCOMONT, Rev. Ent. franc. 1904 ; *Geotrypes* **subg. n.** *Allotrypes* for *G. mandibularis* Reitt., *G. distinctus*, characters, p. 65, *marginatus*, *intermedius*, *laevigatus*, synonymy, pp. 66, 67, FRANÇOIS, Bull. Soc. ent. France 1904 ; *G. niger* Marsh. = (*hypocrita* Serv.), BEDEL, p. 152, Abeille xxx, *G. (Thorectes) intermedius* Costa = (*laevigatus* Muls., Auctt., nec Fabr. = *cheroni* Croiss., id. l. c. ; *G. vernalis*, *stercorarius*, natural history, larvæ, OHAUS, pp. 103–108, Verh. Ver. Hamburg Unterh. xii.
- G. (Thorectes) punctato-lineatus*, S. E. Spain, FRANÇOIS, p. 141, Bull. Soc. ent. France 1904 ; *G. genestieri*, China, p. 220, *G. (Phelotrupes) varicollicollis*, Yunnan, *indicus*, N. India, p. 226, *immarginatus*, Se-tschuen, p. 231, *oberthuri*, *denticulatus*, p. 232, Siao-Lou, *G. (Odontotrupes* **subg. n.**), p. 236, *purpurei-punctatus*, p. 239, Se-tschuen, *taurus*, Centr. Asia, p. 240, *rufipes*, p. 242, *G. (Thorectes) armatas*, p. 246, Se-tschuen, BOUCOMONT, Rev. Ent. franc. 1904 : **n. spp.**
- Gymnopleurus*, *coriarius* Herbst. = (*flagellatus* Fabr., auctt.), BEDEL, p. 152, Abeille-xxx.
- Helicopris felschei*, E. Africa, KOLBE, p. 287, Berlin. ent. Zeitschr. xlix, **n. sp.**
- Hybosorides* ; the Australian, BLACKBURN, p. 180, P. Soc. Victoria xvii.
- Idiostoma* **n. g.** and **n. subfam.**, p. 740, *I. rufum*, pl. xxxvi, fig. 1, *medon* **n. spp.**, Patagonia, p. 741, ARROW, Tr. ent. Soc. London 1904.
- Lethrus (Ceratodirus)*, synonymy, REITTER, pp. 83, 84, Wien. ent. Zeit. xxiii ; *L. cephalotes*, combats, HAJOSS, pp. 8–10, Rov. Lapok xi.
- L. (Microlethrus) mithras*, Persia, REITTER, p. 256, Wien. ent. Zeit. xxiii, **n. sp.**
- Liatongus basicornis*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Milichus rhodesianus*, S. Africa, PÉRINGUEY, p. 222, Ann. S. African Mus. iii, **n. sp.**
- Ochodeus maculipennis*, Java, pl. xxxvi, fig. 3, p. 743, *decoratus*, Penang, *campsoognathus*, fig. 2, Argentina, p. 744, *tridentatus*, Colombia, p. 745, ARROW, Tr. ent. Soc. London 1904, **n. spp.**
- Odontotrupes* **subg. n.** cf. *Geotrupes*.
- Oniticellus tibatensis*, Cameroons, KOLBE, p. 295, Berlin. ent. Zeitschr. xlix ; *O. sjostedti*, Cameroons, FELSCH, p. 403, Arkiv Zool. i : **n. spp.**
- Onthophagus granulum* **n. n.** for *granum* d'Orb., *O. minutus* Hausm. = (*rufus* Boh.), *setosus* = (*cretus* Pér.), *criniger* **n. n.** for *crinitus* d'Orb., p. 326, *fulleborni* Kolbe = (*hauseri* d'Orb.), *nyassicus* Kolbe = (*tridepressus* d'Orb.), p. 328, d'ORBIGNY, Ann. Mus. Genova xli ; *O. transcaspicus* Koen. = (*lineatus* Reitt.), REITTER, p. 25, Wien. ent. Zeit. xxiii.
- O. sjostedti*, Cameroons, d'ORBIGNY, p. 407, Arkiv Zool. i ; *O. ragazzii*, p. 261, *traversii*, p. 262, *aeremicans*, p. 264, *rufovirens*, p. 266, *calous*, p. 268, *impunctatus*, p. 271, *astigma*, p. 273, *flavibasis*, p. 274, with varr. *lineiger*, *mundatus*, p. 275, *stillatus*, p. 277, *choanicus*, p. 279, *levis*, p. 281, *hirtipodex*, p. 283, *longiceps*, p. 285, *gestroi*, p. 287, *bituber*, p. 289, *carinifer*, p. 292, *concaavifrons*, p. 294, *scaberrimus*, p. 296, *unicarina*, p. 298, *investis*, p. 301, *piceiceps*, p. 304, *O. (Phalops) gallanus*, p. 309, *O. (Proagoderus) flexicollis*, p. 314, *triarmatus*, p. 320, Africa, d'ORBIGNY, Ann. Mus. Genova xli ; *O. nitidifrons*, p. 425, *inconstans*, p. 426, *miles*, p. 428, *nonstriatus*, p. 430, *bidentiger*, p. 433, *imbellis*, p. 434, *feai*, p. 436, *androgynus*, p. 439, *curtipilis*, p. 440, *mucronifer*, p. 442, *altidorsis*, p. 443, W. Africa, d'ORBIGNY, t. c. ; *O. cupreovirens*, p. 204, *adornatus*, p. 205, *arcifer*, p. 206, *anthracites*, p. 208, *bocandei*, p. 209, *minax*, p. 210, *duvivieri*, p. 211, *semiviridis*, p. 212, *tschoffeni*, p. 213, *flavorufus*, p. 215, *rufaticollis*,

- p. 216, *O. (Proag.) superbus*, p. 217, *prædentatus*, p. 218, *marginidens*, p. 220, Africa, D'ORBIGNY, Ann. Soc. ent. Belgique xlviii; *O. placens*, p. 219, *prætorius*, *decedens*, p. 220, *serenus*, p. 221, *rhynchophorus*, p. 222, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii; *O. carteri*, N.S.W., p. 147, *jungi*, S. Australia, p. 148, BLACKBURN, P. Soc. Victoria xvii : **n. spp.**
- Orphnus striatopunctatus*, Cameroons, FELSCH, p. 405, Arkiv Zool. i, **n. sp.**
- Panelus pygmaeus* MacL. = (*arthuri* Blackb.), LEA, p. 89, P. Linn. Soc. N. S. Wales xxix.
- Phycochus*; tarsal structure, LEA, p. 90, t. c.
- P. sulcipennis*, Tasmania, id. p. 89, pl. iv, fig. 10, t. c. **n. sp.**
- Pleurophorus cæsus* = (*Atenius rugiceps* Dury), BEDEL, p. 152, Abeille xxx.
- Psammodius australicus*, *obscurior*, Australia, BLACKBURN, p. 174, P. Soc. Victoria xvii, **n. spp.**
- Pseudopedaria n. g.* for *Pedaria grossa* Th., FELSCH, p. 400, Arkiv Zool. i.
- Rhyssenus*; synonymy of French species, CHABAUT, pp. 90–92, Bull. Soc. Nîmes xxxi.
- Saprosites mansuetus*, p. 175, *sternalis*, p. 176, Australia, BLACKBURN, P. Soc. Victoria xvii, **n. spp.**
- Saprus n. g.* near *Saprosites*, p. 178, *S. griffithi n. sp.*, Tasmania, p. 179, BLACKBURN, t. c.
- Thorectes nitidus*, characters, synonymy, *latus* = (*inflatus* Reitt.), *rugosicollis* = (*chalconotus* Cherr.), *semisericeus* = (*rugatulus* Jck.), *punctulatus* = (*brancziki* Apf.), id. p. 140, Bull. Soc. ent. France 1904.
- Thyregis n. g.* *Scatonomides*, p. 145, *T. kershawi n. sp.*, Victoria, p. 146, BLACKBURN, P. Soc. Victoria xvii.
- Tomogonus subg. n.* for *Caccobius castaneus*, D'ORBIGNY, p. 254, Ann. Mus. Genova xli.
- Trox*; Australian, synonymy, descriptions and tables, BLACKBURN, pp. 281–296, Tr. R. Soc. S. Austral. xxviii.
- T. demaisonii*, Asia Minor, REITTER, p. 156, Wien. ent. Zeit. xxiii; *T. nigrociliatus*, *raduloides*, p. 293, *annexus*, *massaicus*, *erlangeri*, *neumannii*, p. 293, *amitinus*, p. 294, Africa, KOLBE, Berlin. ent. Zeitschr. xlix; *T. tasmanicus*, Tasmania, *setosipennis*, p. 292, *eyrensis*, p. 293, *tricolor*, p. 295, *perhispidus*, p. 296, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxviii : **n. spp.**

Glaphyrini.

Synopsis of *Glaphyrus*, with identification of sexes and synonymy, CHAMPENOIS, Abeille xxx, pp. 137–151.

Hemiglaphyrus subg. n. p. 145, t. c., for *caucasicus* and *modestus*.

Melolonthini.

[Cf. BROUN (184), FAIRMAIRE (473, 474), PÉRINGUEY (1027), PIC (1068).]

The *Melolonthini* of S. Africa, systematic work, PÉRINGUEY, Tr. S. African Soc. xiii, pp. 1–293.

Ablabera hottentota, p. 79, *transvaalica*, *hirticollis*, p. 80, *capicola*, p. 81, *gravidula*, *gratula*, p. 82, *modesta*, *amæna*, p. 83, *matabelena*, *hopeiana*, p. 84, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**

Abladeroides ditissimus, *pavoninus*, p. 62, *emeritus*, *letulus*, p. 64, *tardus*, *pauper*, *cognatus*, p. 66, *namaquanus*, p. 68, *quæsitus*, *decedens*, *ominosus*, p. 70, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Achelyna testacea, Transvaal, PÉRINGUEY, p. 154, t. c. **n. sp.**

- Achloa delicatula*, *blandula*, *echinaticeps*, S. Africa, PÉRINGUEY, t. c. **n. spp.**
Ægostetha simplex, p. 122, *brachiata*, p. 124, S. Africa, PÉRINGUEY, t. c. **n. sp.**
- Aipeiopsis* **n. g.** *Pachypodinae*, p. 160, *A. hirsuta* **n. sp.**, Cape Colony, p. 161, PÉRINGUEY, t. c.
- Allokotarsa* **n. g.** near *Serica*, p. 36, *A. rotundicollis*, *clypeata* **n. spp.**, S. Africa, p. 37, PÉRINGUEY, t. c.
- Alogistotarsa* **n. g.** *Sericinae*, p. 39, *A. straminea*, *ovampoana* **n. spp.**, S. Africa, p. 40, PÉRINGUEY, t. c.
- Amphimallus fuscus*, metamorphosis, XAMBEU, p. 33, Naturaliste 1904; *A. pygialis*, habits etc., CLERMONT, pp. 104-106, Bull. Soc. ent. France 1904.
- Anoxiella* Reitt. = (*Schistocometa* Brenske), REITTER, p. 24, Wien. ent. Zeit. xxiii.
- Apogonia improba*, *mashona*, Rhodesia, PÉRINGUEY, p. 292, Tr. S. African Soc. xiii, **n. sp.**
- Arraphytarsa* **n. g.** *Sericinae*, *A. damarina* **n. sp.**, S. Africa, PÉRINGUEY, p. 39, t. c.
- Atys hybrida*, p. 253, *inscita*, *inverta*, p. 254, *infans*, *straminea*, p. 256, *fallax*, *hypocrita*, p. 257, *simplex*, *humilis*, p. 258, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Autoserica tessellata*, p. 11, *annectens*, *A. (Lepiserica) partula*, p. 12, *proteana*, *australis*, p. 13, *A. rhodesiana*, *concordans*, p. 14, *distinguenda*, p. 15, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Beriqua* **n. g.** *Schizonychides*, p. 185, *B. modesta* **n. sp.**, Cape Colony, p. 186, PÉRINGUEY, t. c.
- Brachylepis hauseri* (Brenske), Zambesi, PÉRINGUEY, p. 288, **n. sp.**
- Camenta transvaalensis*, *lydenburgiana*, *capicola*, p. 95, *salisburyana*, *modesta*, p. 96, *coriacea*, p. 97, *simillima*, *inops*, p. 98, *tonguatsana*, p. 99, *pilosella*, *caffrina*, p. 100, *tumida*, *rhodesiana*, p. 101, *matabelena*, *zambesina*, p. 102, *mashona*, p. 103, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Clitopa zambesina*, p. 150, *præcalva*, p. 151, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Clypeasta* **n. n.** for *Clypearia* Fairm. 1903, FAIRMAIRE, p. 226, Ann. Soc. ent. Belgique xlviii.
- Coniopholis proxima*, Transvaal, PÉRINGUEY, p. 273, Tr. S. African Soc. xiii, **n. sp.**
- Cyclomera riktatlensis*, Mozambique, PÉRINGUEY, p. 140, t. c. **n. sp.**
- Diaphoroserica* **n. g.** *D. mashona* **n. sp.**, S. Africa, PÉRINGUEY, t. c.
- Doleroserica* **n. g.** p. 53, *D. gentilis*, *lætula*, p. 54, *festæ*, *auspicata*, p. 55, **n. spp.**, S. Africa, PÉRINGUEY, t. c.
- Dolerotarsa* **n. g.** near *Serica*, *D. emendatrix* **n. sp.**, Transvaal, PÉRINGUEY, p. 38, t. c.
- Empecta latipennis*, Madagascar, FAIRMAIRE, p. 126, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- E. subcostata*, Madagascar, FAIRMAIRE, t. c. **n. sp.**
- Entyposis mendax*, Rhodesia, PÉRINGUEY, p. 259, Tr. S. African Soc. xiii, **n. sp.**
- Etiserica* **n. g.** p. 23, *E. simplex* **n. sp.**, Rhodesia, p. 24, PÉRINGUEY, t. c.
- Eulepida tschindeana*, Mozambique, PÉRINGUEY, p. 285, t. c. **n. sp.**
- Euronycha* **n. g.** near *Triodonta*, p. 30, *E. rhodesiana*, *sebakuana* **n. spp.**, S. Africa, p. 32, PÉRINGUEY, t. c.
- Gamka* **n. g.** *Pachypodinae*, p. 159, *G. minuta* **n. sp.**, Cape Colony, p. 160, PÉRINGUEY, t. c.
- Glyptoglossa dispar*, *namaquensis*, Cape Colony, PÉRINGUEY, t. c. **n. spp.**
- Gryphonycha* **n. g.** for *Puberula* Fahr., PÉRINGUEY, p. 30, t. c.
- Holisonycha* **n. g.** near *Schizonycha*, *H. mellila* **n. sp.**, Cape Colony, PÉRINGUEY, p. 261, t. c.

- Hoplia* (*Decamera*) *hauseri*, Turkestan, REITTER, p. 157, Wien. ent. Zeit. xxiii, **n. sp.**
- Hoplonthia* **n. g.** *paviei* **n. sp.**, Cambodia, FAIRMAIRE, p. 87, pl. ix bis, fig. 3, Mission Pavie iii.
- Hyboserica* **n. g.** *H. globuliformis*, Brenske and *Triodonta caffra*, PÉRINGUEY, p. 27, Tr. S. African Soc. xiii.
- Idecamenta* **n. g.** *I. jucunda* **n. sp.**, S. Africa, p. 112, PÉRINGUEY, t. c.
- Idaericia* **n. g.** p. 32, *I. gratula* **n. sp.**, S. Africa, p. 33, PÉRINGUEY, t. c.
- Kraseophylla* **n. g.** near *Macrophylla*, p. 134, *K. distincta* **n. sp.**, Cape Colony, p. 135, PÉRINGUEY, t. c.
- Lachnosterna pinguis*, Cambodia, FAIRMAIRE, p. 88, Mission Pavie iii, **n. sp.**
- Leribe* **n. g.** p. 113, *L. vesca* **n. sp.**, Natal, PÉRINGUEY, Tr. S. African Soc. xiii.
- Liparetrus tuberculatus*, emendation, LEA, p. 89, P. Linn. Soc. N. S. Wales xxix.
- Macrophylla natalensis*, p. 127, *capicola*, *nigricollis*, p. 128, *pubens*, p. 129, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**
- Melolontha*, periodicity in Hungary, LÓSY, pp. 301, 304, Allatt. Kozl. Magyar Tars. iii.
- Microcamenta seabakuensis*, p. 87, *ovampoensis*, p. 88, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**
- Mycernus* **n. g.** near *Psilodontia* for *M. elegans* **n. sp.**, New Zealand, BROWN, p. 52, Ann. Nat. Hist. xiv.
- Neoserica transvaalensis*, S. Africa, PÉRINGUEY, p. 22, Tr. S. African Soc. xiii, **n. sp.**
- Oocamenta*, **n. g.** p. 105, for *C. rufiventris* Burm. and *O. (Pseudocamenta* subg. *n.*) *transvaalia* **sp. n.**, Transvaal, p. 107, PÉRINGUEY, t. c.
- Paracamenta* **n. g.** p. 108, for pt. of *Camenta*, with *P. conspicua*, p. 110, *suturalis*, *lydenburgiana*, p. 111, *calva*, p. 112, **n. spp.**, S. Africa, PÉRINGUEY, t. c.
- Pasaphylla* **n. g.** p. 135, near *Macrophylla*, *P. libens* **n. sp.**, Cape Colony, p. 136, PÉRINGUEY, t. c.
- Pegglidius* **n. g.** near *Hypopholis*, p. 279, *P. mashunus* **n. sp.**, Rhodesia, p. 280, PÉRINGUEY, t. c.
- Pericamenta* **n. g.** *P. paupercula* **n. sp.**, Cape Colony, PÉRINGUEY, p. 105, t. c.
- Perilitopa gariopina*, p. 143, *varicornis*, *dubiosula*, p. 144, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Phytolaema hermanni* and *Ricera plebeia*, injurious habits, larvæ, RIVERA, pp. 241 etc., Revist. chilena viii.
- Pleiohylla* **n. g.** near *Macrophylla*, p. 130, *P. vestita* **n. sp.**, Cape Colony, p. 131, PÉRINGUEY, Tr. S. African Soc. xiii.
- Pleistophylla* **n. g.** p. 155, *P. singularis* **n. sp.**, Transvaal, p. 156, PÉRINGUEY, t. c.
- Pleophylla tongaatsana*, Natal, PÉRINGUEY, p. 9, t. c.
- Prodontria* **n. g.** p. 53, for *P. lewisii* **n. sp.**, New Zealand, p. 54, BROWN, Ann. Nat. Hist. xiv.
- Pseudachloa* **n. g.** p. 162, *P. leonina* **n. sp.**, S. Africa, p. 163, PÉRINGUEY, Tr. S. African Soc. xiii.
- Pseudocamenta* subg. **n.** see *Oocamenta*.
- Pseustophylla* **n. g.** p. 157, *P. pretoriana* **n. sp.**, Transvaal, p. 158, PÉRINGUEY, Tr. S. African Soc. xiii.
- Psilonychus deridens*, p. 267, *barkeri*, p. 268, *perturbator*, p. 269, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Schizonycha saginata*, p. 201, *boschimana*, p. 202, *idonea*, p. 205, *fartula*, p. 206, *infantilis*, p. 207, *transvaalica*, *parilis*, p. 208, *puerilis*, *disputabilis*, *mediastina*, p. 209, *inedita*, p. 210, *meracula*, *exasperans*, p. 211, *insuesa*, *gonagua*, p. 212, *exacerbens*, *profuga*, p. 213, *continens*,

p. 214, *quæsitæ*, p. 216, *minima*, p. 218, *saga*, *durbana*, p. 219, *perplexabilis*, *dissimilis*, p. 220, *constrata*, p. 221, *plausibilis*, p. 223, *citima*, p. 225, *fraudulenta*, p. 226, *dissensa*, p. 227, *infarsa*, p. 228, *neutra*, p. 229, *immixta*, p. 230, *fraudigera*, *vaalensis*, p. 231, *manicana*, p. 232, *languens*, *ignava*, p. 234, *egens*, *paupercula*, p. 235, *ovampoana*, p. 236, *spuria*, p. 237, *spectabilis*, p. 239, *alga*, *zambesiana*, p. 240, *salisburyana*, p. 241, *elegans*, *furva*, p. 242, *noscitata*, p. 243, *indotata*, p. 245, *fatidica*, *scabiosa*, p. 246, *caffra*, p. 247, *incrata*, p. 248, *confinis*, *divulsa*, p. 249, *inops*, p. 250, *vicaria*, p. 251, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Sebakue **n. g.** near *Schizonycha*, *S. coriacea* **n. sp.**, S. Africa, PÉRINGUEY, p. 264, t. c.

Serica (*Ophthalmoserica*) *rosinæ*, Amurland, PIC, p. 33, Echange 1904, **n. sp.**
Sparrmannia transvaalica, *capicola*, p. 176, *prieska*, *namaqua*, *boschimana*, p. 177, *gonagua*, p. 178, *discrepans*, p. 179, *bechuana*, p. 180, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**

Stenosericæ delagoana, *zambesicola*, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Suntemnonycha **n. g.** near *Schizonycha*, *S. collusor* **n. sp.**, Rhodesia, PÉRINGUEY, p. 262, t. c.

Syngeneschiza omrumba, Ovampoland, PÉRINGUEY, p. 261, t. c. **n. sp.**

Tlacocera **n. g.** near *Macrophylla*, *T. saga* **n. sp.**, Cape Colony, PÉRINGUEY, p. 133, t. c.

Trichinopus titania, Damaraland, PÉRINGUEY, p. 165, t. c. **n. sp.**

Trochalus vagus, *damarus*, p. 44, *mashunus*, p. 45, *inops*, *exasperans*, p. 46, *orbiculatus*, p. 48, *placens*, p. 49, *lepidus*, *urbanus*, *sebakuanus*, p. 51, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Tulbaghia **n. g.** near *Microcamenta*, p. 88, *T. lightfooti*, p. 89, *cereris*, p. 90, **n. spp.**, Cape Colony, PÉRINGUEY, t. c.

Rutelini.

[Cf. BATES (92), FAIRMAIRE (473, 474), JACOBSON (740), OHAUS (990, 991).]

Revision of Australian *Anoplognathides*, OHAUS, pp. 57–175, Stettin Ent. Zeit. lxxv.

Revision of American *Anoplognathides*, pt. i, OHAUS, t. c. pp. 254–341.

Revision of *Pelidnotinæ* with table of genera, BATES, Tr. ent. Soc. London 1904, pp. 249–276.

Adoretus ampliatus, p. 226, *rugosohirtus*, p. 227, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Amblyterus clypealis, Australia, OHAUS, p. 165, Stettin Ent. Zeit. lxxv, **n. sp.**

Anomala gudzenkoi, Mantchuria, JACOBSON, p. xiii, Annuaire Mus. St. Petersb. viii, **n. sp.**

Anoplognathus acuminatus, Australia, OHAUS, p. 105, Stettin Ent. Zeit. lxxv, **n. sp.**

Antichira meridionalis, injurious in Jamaica, PANTON, p. 117, Bull. Dep. Agric. Jamaica ii.

Callichloris helleri, p. 334, *kirschi*, p. 335, *bessleri*, p. 336, Peru and Colombia, OHAUS, Stettin Ent. Zeit. lxxv, **n. spp.**

Chrysina beckeri to *Plusiotis*, BATES, p. 272, Tr. ent. Soc. London 1904.

Epichalcoplethis **n. g.**, BATES, p. 253, and ARROW, p. 272, for *Pelidnota velutipes*, ARROW, Tr. ent. Soc. London 1904.

Hoplopelidnota **n. g.** *H. candezei* **n. sp.**, Cayenne, p. 274, BATES, t. c.

Hoplognathus maculatus=(*Pelidn. bimaculata* Cast.), ARROW, p. 260, Tr. ent. Soc. London 1904.

Lasiocala ohausi, Colombia, BATES, p. 273, Tr. ent. Soc. London 1904, **n. sp.**

- Mecopelidnota* **n. g.** p. 270, *M. arrowi*, Ecuador, **n. sp.** p. 271, and including *P. cylindrica* Waterh., BATES, t. c.
- Microrutela* **n. g.** for *Chalcantis cerulea* and *louta*, BATES, p. 250, t. c.
- Paraschizognathus* **n. g.**, p. 125, for *nigripennis* Bl. etc., and *P. prasini-collis*, p. 128, *olivaceus*, p. 132, **n. spp.**, Australia, OHAUS, Stettin Ent. Zeit. lxx.
- Pelidnota quadripunctata*, p. 260, *aciculata*, Cayenne, *kirschi*, p. 261, with var. *tenuistriata*, *dubia*, p. 262, Colombia, *acutipennis*, Venezuela, p. 263, *vittipennis*, Brazil, p. 264, *chiriquina*, Panama, p. 265, *paraguayensis*, Paraguay, p. 266, *championi*, Tucuman, *ancilla*, p. 267, *pallidipennis*, p. 268, *fracida*, Brazil, *cayennensis*, Guiana, p. 269, BATES, Tr. ent. Soc. London 1904, **n. spp.**
- Phalangogonia debilidens*, Costa Rica, OHAUS, p. 271, Stettin Ent. Zeit. lxx, **n. sp.**
- Platycelia inflata*, Bolivia, p. 286, *limbata*, Argentina, p. 288, *steinheili*, Colombia, p. 291, *forcipalis*, Ecuador, p. 293, *occidentalis*, Colombia, p. 296, *abdominalis*, Peru, p. 299, *mesosternalis*, Costa Rica, p. 300, *variolosa*, Colombia, p. 304, *nigrosternalis*, p. 305, with varr. *laevigata*, *pygidialis*, p. 306, *puncticollis*, p. 307, with varr. *bilineata*, *unicolor*, p. 309, *tschudii*, p. 309, *wallisi*, p. 311, *burmeisteri*, p. 312, *unguicularis*, p. 314, *flavoscuteolata*, p. 315, *hirta*, p. 317, *confluens*, p. 318, *chrysotina*, p. 320, *pulchrior*, p. 321, *gaujoni*, p. 323, *rufosignata*, p. 331, N. W. South America, OHAUS, t. c. **n. spp.**
- Plusiotis cupreomarginata*, Costa Rica, BATES, p. 272, Tr. ent. Soc. London 1904, **n. sp.**
- Pseudoschizognathus* **n. g.**, p. 145, *P. variicollis*, p. 146, *schonfeldti*, p. 147, **n. spp.**, Australia, OHAUS, Stettin Ent. Zeit. lxx.
- Rutela varicolor* Latr. = (*Pelidn. venezuelensis* G. & H.), ARROW, p. 260, Tr. ent. Soc. London 1904.
- Saulostomus felschei*, p. 156, *weisei*, p. 157, Australia, OHAUS, Stettin Ent. Zeit. lxx, **n. spp.**
- Schizognathus burmeisteri*, p. 138, *viridiceneus*, p. 140, *lucidus*, p. 142, Australia, OHAUS, t. c. **n. spp.**
- Trioplognathus* **n. g.** for *griseopilosus* Oh., OHAUS, p. 133, t. c.
- Xenopelidnota* **n. g.** for *Plusiotis anomala*, BATES, p. 275, Tr. ent. Soc. London 1904.

Dynastini.

- [Cf. BRETHES (175), BROUN (184), KOLBE (830), STERNBERG (1344).]
- Aegopsis atra*, Chiriqui, Colombia, p. 21, *trinidadensis*, Trinidad, p. 24, *nigricollis*, Colombia, p. 26, *rubricollis*, Orinoco, p. 28, STERNBERG, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Alcidossoma siamensis*, and ♂ minor, pl. ix bis fig. 2, p. 51, Mission Pavie iii.
- Cyclocephala tucumana*, p. 330, *andina*, p. 331, Tucuman, BRÈTHES, An. Mus. Buenos Aires xi, **n. spp.**
- Peltonotus morio*, ♂, FAIRMAIRE, p. 88, Mission Pavie iii.
- Pentodon subdilatatus*, *idiota*, note, pp. xv-xvii; *P. reitteri* n. n., p. xvi, JAKOVLEV, Annuaire Mus. St. Petersb. ix.
- Pericoptus frontalis*, New Zealand, BROUN, p. 55, Ann. Nat. Hist. xiv, **n. sp.**
- Temnorhynchus glauvingi*, Lake Tchad, KOLBE, p. 295, Berlin. ent. Zeitschr. xlix, **n. sp.**

Cetoniini.

- [Cf. FAIRMAIRE (473, 474), HAUSER (664), HEATH (668), KOLBE (830, 831), MOSER (964, 965), PIC (1075), PREISS (1106).]
- Structure and classification of *Valgide*, KOLBE, pp. 3-9, Stettin Ent. Zeit. lxx.

- Amaurina polysticta* var. n. *picticollis*, MOSER, p. 66, Berlin. ent. Zeitschr. xlix.
- Anepsiovalgus* n. g., p. 30, *A. minimus* n. sp., Sumatra, p. 32, KOLBE, Stettin Ent. Zeit. lxxv.
- Anochilia subvidua*, p. 227, *laterivirens*, p. 228, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, n. spp.
- Bothrorrhina nickerli* ♀, HELLER, p. 12, Deutsche ent. Zeitschr. 1904; *B. rufonasuta* Fairm. = (*nickerli* Hell.), HELLER, p. 303, t. c.
- Brachymitra* n. g. near *Composcephalus*, *B. thomasi* n. sp., E. Africa, KOLBE, p. 297, Berlin. ent. Zeitschr. xlix.
- Callinomes rufiventris*, Laos, FAIRMAIRE, p. 86, Mission Pavie iii, n. sp.
- Charitovalgus*, n. g. p. 20 for *Valgus pulcher*, *doriae*, and *C. andamanicus* n. sp., Andamans, p. 22, KOLBE, Stettin Ent. Zeit. lxxv.
- Clinteria usambarica*, E. Africa, MOSER, p. 60, Berlin. ent. Zeitschr. xlix, n. sp.
- Cœlorrhina cornuta*, E. Africa, p. 101, fig. 2, HEATH, Entomologist 1904, n. sp.
- Coptomia bontempsi*, characters, FAIRMAIRE, p. 229, Ann. Soc. ent. Belgique xlviii.
- C. castanoptera*, Madagascar, FAIRMAIRE, p. 228, t. c. n. sp.
- Cyclophorus marginicollis*, Sao-Thomé, MOSER, p. 59, Berlin. ent. Zeitschr. xlix, n. sp.
- Dasyvalgus* n. g. p. 34, for part of *Valgus*, and *D. infuscatus*, Borneo, p. 37, *udei*, Sumatra, p. 38, *rollei*, p. 39, *monachus* with subsp. *polyxanthus*, p. 40, Borneo, *dohrni*, Sumatra, p. 41, *eucharis*, Malacca, p. 42, n. spp., KOLBE, Stettin Ent. Zeit. lxxv; *D. pygidialis*, Sumatra, p. 267, *striatipennis*, Perak, p. 268, *bipustulatus*, Borneo, *fraterculus*, Sumatra, p. 269, *piceus*, Tonkin, p. 270, *nigerrimus*, Borneo, p. 271, MOSER, Berlin. Ent. Zeitschr. xlix: n. spp.
- Diphrontis hintzi*, E. Africa, MOSER, p. 70, t. c. n. sp.
- Dischista marginata*, E. Africa, MOSER, p. 6, t. c. n. sp.
- Discopeltis picta*, p. 66, *variabilis*, p. 67, with varr., pp. 68, 69, E. Africa MOSER, t. c. n. spp.
- Euchilia laevicostata*, *satarata*, *protensa*, *externecostata*, Madagascar, FAIRMAIRE, p. 230, Ann. Soc. ent. Belgique xlviii, n. spp.
- Eucosma flavosignata*, Sao-Thomé, MOSER, p. 64, Berlin. Ent. Zeitschr. xlix, n. sp.
- Eudicella immaculata*, Uganda, HEATH, p. 102, fig. 1, Entomologist 1904, n. sp.
- Fornasinius hirthi*, E. Africa, PREISS, p. 15, pl. i, fig. 1, Jahrb. nassau. Ver. lvii, n. sp.
- Goliathopsis lameyi*, pl. ix bis, fig. 5, p. 90, FAIRMAIRE, Mission Pavie iii.
- Goliathus giganteus*, var. n. *connectens*, CSIKI, p. 302, Ann. Mus. Hungar. ii; *G. giganteus*, var. n. *grandis*, VEEN, pp. 64–66, pl., Bull. kol. Mus. Haarlem xxx.
- Hoplitovalgus* n. g. *H. fallaciosus* n. sp., Borneo, KOLBE, p. 49, Stettin Ent. Zeit. lxxv.
- Hybovalgus* n. g. p. 55, *H. bioculatus* n. sp., Tonkin, p. 56, KOLBE, t. c.; *H. tonkinensis*, *fulvosquamosus*, Tonkin, MOSER, p. 272, Berlin. ent. Zeitschr. xlix, n. spp.
- Ischyrocera* n. g. p. 34, *I. darcisi* n. sp., Africa, p. 35, HAUSER, Deutsche ent. Zeitschr. 1904.
- Leucocelis elegans*, var. n. *ornaticollis*, MOSER, p. 66, Berlin. ent. Zeitschr. xlix.
- L. ertli*, pl. i, fig. 4, p. 22, *bucobensis*, fig. 5, p. 24, *irentina*, fig. 6, p. 25, *angustiformis*, fig. 7, p. 26, PREISS, Jahrb. nassau. Ver. lvii, n. spp.
- Nannovalgus* n. g. p. 26, *N. pusio* n. sp., Borneo, p. 27, KOLBE, Stettin Ent. Zeit. lxxv.

- Neophædimus melaleucus*, pl. ix bis, fig. 4, p. 89, FAIRMAIRE, Mission Pavie iii.
- Neptunides polychrous* var. n. *marginipennis*, MOSER, p. 59, Berlin. ent. Zeitschr. 1904.
- Oreovalgus* n. g. p. 18, *O. montuosicollis* n. sp., Borneo, p. 19, KOLBE, Stettin Ent. Zeit. lxx.
- Osmoderma breripennis*, Taurus, PIC, p. 74 & p. 83, Echange xx, n. sp.
- Oxythyrea albomaculata*, E. Africa, MOSER, p. 65, Berlin. ent. Zeitschr. xlix, n. sp.
- Pachnoda discolor* var., pl. i, fig. 2, p. 19, PREISS, Jahrb. nassau. Ver. lvii.
- P. testaceipennis*, E. Africa, MOSER, p. 61, Berlin. ent. Zeitschr. xlix;
- P. sauberlichii*, E. Africa, HAUSER, p. 36, Deutsche ent. Zeitschr. 1904: n. spp.
- Pædiovulgus* n. g. p. 14, *P. micros* n. sp., Borneo, p. 15, with varr. *parvus*, *lineellus*, *morio*, p. 17, KOLBE, Stettin Ent. Zeit. lxx.
- Paraleucocelis* n. g. *P. conradsi*, n. sp. E. Africa, pl. i, fig. 3, PREISS, p. 21, Jahrb. nassau. Ver. lvii.
- Parapæcilophila* n. g. p. 36, *P. krautzi* n. sp., E. Africa, p. 37, HAUSER, Deutsche ent. Zeitschr. 1904.
- Piochilia* Fairm. and *Prochyta* Fairm. are the same, *P. scalabri* ♂, FAIRMAIRE, p. 227, Ann. Soc. ent Belgique xlviii.
- Plocovalgus* n. g. *P. waterstradti* n. sp., Borneo and subsp. *rufosquamosa*, KOLBE, p. 45, Stettin Ent. Zeit. lxx.
- Pæcilophila tessellata*, E. Africa, MOSER, p. 69, Berlin. ent. Zeitschr. xlix, n. sp.
- Potosia affinis*, *cuprea*, *incerta*, distinctions, MÜLLER, pp. 172, 173, Wien. ent. Zeit. xxiii.
- Pseudinca moseri*, Nyassa, HAUSER, p. 38, Deutsche ent. Zeitschr. 1904, n. sp.
- Pygora luctifera*, variation, synonymy, FAIRMAIRE, p. 229, Ann. Soc. ent. Belgique xlviii.
- Ranzania bertolonii minor* subsp. n., KOLBE, p. 298, Berlin. ent. Zeitschr. xlix.
- Sphinctovalgus* n. g. p. 51, *S. conradti* n. sp., Cameroons, p. 53, KOLBE, Stettin Ent. Zeit. lxx.
- Spilovalgus* n. g. for *Valgus modiglianii* Gestro, KOLBE, p. 32, Stettin Ent. Zeit. lxx; *S. biguttatus*, Perak, p. 266, *propygidialis*, Assam, p. 267, MOSER, Berlin. ent. Zeitschr. xlix, n. spp.
- Syngonovulgus* n. g. p. 28, *S. subnitidus* n. sp., Borneo and Sumatra, p. 29, KOLBE, Stettin Ent. Zeit. lxx.
- Systellorhina tricolor*, p. 62, *kolbei*, p. 63, E. Africa, MOSER, Berlin. ent. Zeitschr. xlix, n. spp.
- Theodosia telifer*=(*rothschildi* Jans.), MOSER, p. 273, t. c.
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- Trichovalgus* subg. n. of *Dasyvalgus* for *niger* Kr., KOLBE, p. 44, Stettin Ent. Zeit. lxx.
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BUPRESTIDÆ.

[Cf. ABEILLE (1, 5), ESCALERA (467), FAIRMAIRE (473), FAUVEL (486), JAKOVLEFF (752, 753), KERREMANS (786, 787), PIC (1065), RAINBOW (1119), REITTER (1141, 1155), SCHAEFFER (1220), THÉRY (1377, 1378), WATERHOUSE (1491).]

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- Acherusia saundersii*, Brazil, WATERHOUSE, p. 249, Ann. Nat. Hist. xiv, **n. sp.**
- Acmæodera*; synonymy, WATERHOUSE, pp. 258–265, t. c.; *A. hirsutula* var. n. *æquistriata*, p. 221, *A. laticornis* var. n. *olivacea*, p. 223, ABEILLE, Bol. Soc. espan. iv.
- A. varivestis*, Tunis, p. 220, *crucifera*, Persia, p. 221, *pilivestis*, Spain, *nigellata*, Portugal, p. 222, ABEILLE, t. c.; *A. akbesiana*, Syria, p. 224, *segurensis*, Spain, p. 225, ESCALERA, Bol. Soc. espan. iv; *A. saundersii*, *sumptuosa*, p. 261, Africa, *jamesi*, Somali land, p. 262, *de geeri*, Transvaal, p. 263, *tricolor*, Damara, *brooksi*, Buluwayo, p. 264, *yerburyi*, Arabia, p. 265, WATERHOUSE, Ann. Nat. Hist. xiv; *A. suturifera*, Afghanistan, p. 256, *filiformis*, p. 257, Gobi, REITTER, Wien. ent. Zeit. xxiii; *A. rubescens*, Lower California, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii : **n. spp.**
- Actenodes flexicaulis*, Texas, SCHAEFFER, p. 209, t. c. **n. sp.**
- Agrilus chlorophyllus*, Akbès, ABEILLE, p. 223, Bol. Soc. espan. iv; *A. horni*, p. 161, *aurociliatus*, *nalanda*, p. 162, *kandyanus*, *atomus*, p. 163, *motschoulskyi*, p. 164, *walkeri*, p. 165, Ceylon, THÉRY, Ann. Soc. ent. Belgique xlviii; *A. dollii*, Texas, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii : **n. spp.**
- Ancylوحةira*; notes on palaearctic, ABEILLE, pp. 213, 214, Bol. Soc. espan. iv.
- A. severa*, Syria, id. p. 213, t. c. **n. sp.**
- Anthaxia schah*, Persia, *fulgentipennis*, Algeria, p. 215, *permisa*, Persia, p. 217, ABEILLE, t. c. **n. spp.**
- Astreus caledonicus*, New Caledonia, FAUVEL, p. 116, Rev. Ent. franc. 1904, **n. sp.**
- Aurigena lugubris* = (*creiventris europæa* Ab.), BEDEL, p. 236, Abeille xxx.
- A. guttipennis*, Persia, ABEILLE, p. 213, Bol. Soc. espan. iv, **n. sp.**
- Buprestis alternans*, Syria, *escalerae*, Persia, ABEILLE, p. 212, t. c. **n. spp.**
- Capnodis miliaris* var. n. *aurata*, ABEILLE, p. 211, t. c.
- Cardiaspis pisciformis*, Mysore, THÉRY, p. 73, Bull. Soc. ent. France 1904, **n. sp.**
- Castalia pulchra*, India, p. 252, *fairmairei*, Tonkin, *bettoni*, E. Africa, p. 253, WATERHOUSE, Ann. Nat. Hist. xiv, **n. spp.**
- Chrysaspis*; synonymy, WATERHOUSE, pp. 344–347, t. c.
- C. glabra*, p. 344, *tincta*, *dubia*, *bennettii*, p. 346, *higletti*, p. 347, Africa, WATERHOUSE, Ann. Nat. Hist. xiv, **n. spp.**
- Chrysobothris amurensis*, Amurland, PIC, p. 25, Echange 1904; *C. musæ*, Ceylon, THÉRY, p. 160, Ann. Soc. ent. Belgique xlviii; *C. purpureoplugata*, Arizona, p. 206, *beyeri*, *peninsularis*, Lower California, p. 207, *subapaca*, (sic) Tulare, p. 208, SCHAEFFER, J. N. York Ent. Soc. xii : **n. spp.**
- Chrysochroa fruhstorferi*, Tonkin, *thelwalli*, Nyassa, WATERHOUSE, p. 266, Ann. Nat. Hist. xiv, **n. spp.**
- Cinyra prosternalis*, Texas, SCHAEFFER, p. 205, J. N. York Ent. Soc. xii, **n. sp.**
- Compsoglypha* **n. g.** near *Psiloptera*, *C. perrieri* **n. sp.**, Madagascar, FAIRMAIRE, p. 233, Ann. Soc. ent. Belgique xlviii.
- Conognatha mayeti*, Peru, THÉRY, p. 75, Bull. Soc. ent. France 1904, **n. sp.**
- Coræbus helichrysi*, France, ABEILLE, p. 282, Bull. Soc. ent. France 1904, **n. sp.**
- Cylindromorphus turkestanicus*, Turkestan, ABEILLE, p. 224, Bol. Soc. espan. iv, **n. sp.**
- Demochroa bowringi*, N. India, *meldolana*, Andamans, WATERHOUSE, p. 265, Ann. Nat. Hist. xiv, **n. spp.**
- Dicerca*; table of palæarctic, REITTER, pp. 21–24, Wien. ent. Zeit. xxiii.
- D. miranda*, Herzegowina, id. t. c. p. 24, **n. sp.**

- Discoderes polychrous, cavifrons*, Madagascar, FAIRMAIRE, p. 234, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Julodis onopordi* variation, varr. *n. longicollis, derasa*, etc., ABEILLE, pp. 207–210, Bol. Soc. espan. iv.
- J. escalera, monstrosa*, Persia, ABEILLE, p. 206, t. c. **n. spp.**
- Lampropepla n. n.* for *Mudecassia* Kerr., *L. ophthalmica n. sp.*, Madagascar, FAIRMAIRE, p. 231, Ann. Soc. ent. Belgique xlviii.
- Mastogenius reticulaticollis*, Texas, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii, **n. sp.**
- Melanophila sumptuosa*, Spain, ABEILLE, p. 214, Bol. Soc. espan. iv, **n. sp.**
- Nalanda n. g.* near *Melibæus*, *N. horni n. sp.*, Ceylon, THÉRY, p. 160, Ann. Soc. ent. Belgique xlviii.
- Paracastalia longipennis*, p. 249, *bettoni*, p. 250, *variegata*, p. 251, Africa, WATERHOUSE, Ann. Nat. Hist. xiv, **n. spp.**
- Polybothris pulchriventris*, p. 232, *pygidialis*, p. 233, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Polycesta*; synonymy, WATERHOUSE, pp. 254–258, Ann. Nat. Hist. xiv.
- P. alternans*, Mexico, *regularis*, St Domingo, p. 256, *gossei*, Jamaica, p. 257, *variegata*, Mexico, p. 258, WATERHOUSE, t. c. **n. spp.**
- Ptosima*; only one Pal. species; *P. 11-maculata* var. *n. intermedia*, DEMAISSON, p. 285, Bull. Soc. ent. France 1904; *P. amalibis* var. *n. hieroglyphica*, THÉRY, p. 158, Ann. Soc. ent. Belgique xlviii.
- Rheboscels texana*, Brownsville, SCHAEFFER, p. 211, J. N. York Ent. Soc. xii, **n. sp.**
- Sphenoptera luctifica n. n.* for *luctuosa* Jak., JAKOVLEFF, p. 310, Rev. Russe Ent. 1904; *S. perroteti* var. *n. rugosiventris*, THÉRY, p. 159, Ann. Soc. ent. Belgique xlviii.
- S. (Hoplandrocneme) venusta*, Tiflis, JAKOVLEFF, p. 309, Rev. Russe Ent. 1904; *S. longipennis*, Issyk-Kul, p. 174, *cæsia*, Bucharra, p. 175, *luctuosa*, Dsungaria, p. 177, *S. (Hoplistura) ligulata*, Persia, p. 178, *grata*, Cairo, p. 180, *S. (Chrysoblemma) seriola*, Algeria, p. 181, *S. (Chilostetha) cauta*, Syria, p. 183, *S. (Deudora) caspica*, p. 184, Caspian, JAKOVLEFF, Horæ Soc. ent. Ross. xxxvii; *S. horni*, Ceylon, THÉRY, p. 159, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Steraspis arabica*, Muscat, WATERHOUSE, p. 348, Ann. Nat. Hist. xiv, **n. sp.**
- Sternocera*; much synonymy, WATERHOUSE, pp. 245–248, t. c.
- S. druryi*, Sudan, *stevensii*, Africa, WATERHOUSE, p. 247, t. c. **n. spp.**
- Stigmodera cydista*, Sydney, RAINBOW, p. 246, Rec. Austral. Mus. v, **n. sp.**
- Strobilodera gustoni*, E. Africa, THÉRY, p. 74, Bull. Soc. ent. France 1904, **n. sp.**
- Trachys horni*, p. 165, *bellicosa*, p. 166, *pretiosus, centrimaculatus*, p. 167, Ceylon, THÉRY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

EUCNEMIDÆ.

[Cf. BLANCHARD (135), FAIRMAIRE (473), FAUVEL (486).]

- Cephalodendron sicardi*, Madagascar, FAIRMAIRE, p. 235, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Dromæolus hospitalis*, California, BLANCHARD, p. 187, Ent. News Philad. xv, **n. sp.**
- Fornax caledonicus*, p. 121, *ferrugineus, brevicornis, soricinus*, p. 122, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**

ELATERIDÆ.

[Cf. CARRET (246), DU BUYSSON (214, 215, 216), DANIEL & DANIEL (349), FAIRMAIRE (473), FAUVEL (486), FLEUTIAUX (518), PIC (1059, 1065), RAINBOW (1119), REITTER (1151, 1152, 1156), SCHWARZ (1265, 1266).]

- Adelocera subaurata*, Ceylon, SCHWARZ, p. 46, Spolia Zeylan. ii, **n. sp.**
Æolus dimidiatofasciatus, Sao Paulo, SCHWARZ, p. 71, Deutsche ent. Zeitschr. 1904, **n. sp.**
Agriotes conspicuus, characters, DU BUYSSON, p. 1, Rev. Ent. franc. xxiii.
Agriotes dilataticoxis, Morocco, DU BUYSSON, p. 42, t. c.; *A. nigropubens*, Asia Minor, REITTER, p. 158, Wien. ent. Zeit. xxiii : **n. spp.**
Anoplischius mutabilis, variation, SCHWARZ, p. 11, Deutsche ent. Zeitschr. 1904; *A. anguineus* Er. = (*basalis* = *femoralis* Schw.), id. p. 15, t. c.
A. mutabilis, p. 51, *æneipennis*, p. 52, *trivittatus*, p. 53, *punctatissimus*, p. 54, *nigrolaterus*, p. 55, S. America, SCHWARZ, t. c. **n. spp.**
Athous uncollis varr. n. *gredosanus* and *uhagoni*, REITTER, p. 237, Bol. Soc. espan. iv.
A. subvirgatus, Venetia, K. DANIEL, p. 79, Munchen. Kol. Zeitschr. ii; *A. villardi*, Genoa, CARRET, p. 170, Bull. Soc. ent. France 1904; *A. (Stenagostus) laufferi*, p. 236, *A. (Nomopleus) discors*, p. 237, *martinezi*, *longissimus*, p. 238, *A. (Gripathous) bolivari*, p. 239, Spain, REITTER, Bol. Soc. espan. iv; *A. bagdadensis*, Bagdad, p. 6, *uhagoni*, Spain, p. 7, DU BUYSSON, Rev. Ent. franc. xxiii; for further notes on these and their possible synonymism, cf. t. c. pp. 156, 157; *A. eximius*, p. 58, *insulsus*, p. 59, Amurland, *nudari*, Basses Pyrénées, p. 60, DU BUYSSON, Bull. Soc. ent. France 1904 : **n. spp.**
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Campylus korbi, Amurland, PIC, p. 25, Echange 1904, **n. sp.**
Cardiophorus eliasi, Amanus Mts., PIC, p. 298, Bull. Soc. ent. France 1904; *C. æneipennis*, Madagascar, FLEUTIAUX, p. 12, Bull. Soc. ent. France 1904 : **n. spp.**
Cardiorhinus divaricatus, p. 62, *intermedius*, p. 63, *ruficollis*, p. 64, *infernus*, p. 65, *dimidiatus*, p. 66, *collaris*, p. 67, *cylindricus*, p. 68, Brazil, SCHWARZ, Deutsche ent. Zeitschr. 1904, **n. spp.**
Clon cerambycinus, ♀, SEMENOV, p. 120, Rev. Russe Ent. iv.
Corymbitodes subg. n. of *Ludius*, *C. longicollis* **n. sp.**, Amurland, DU BUYSSON, p. 58, Bull. Soc. ent. France 1904.
Cosmesus posticinus, Brazil, SCHWARZ, p. 69, Deutsche ent. Zeitschr. 1904; *C. cruciger*, p. 79, *atomus*, Argentina, *chiliensis*, *minusculus*, Chili, p. 80, SCHWARZ, t. c. : **n. spp.**
Didymolophus **n. g.** near *Dichelonychus*, p. 235, *D. perrieri* **n. sp.**, Madagascar, p. 236, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii.
Elater gelincki, Herzegowina, REITTER, p. 148, Wien. ent. Zeit. xxiii; *E. nigrita*, *frontalis*, p. 128, *marginellus*, p. 129, New Caledonia, FAUVEL, Rev. Ent. franc. 1904 : **n. spp.**
Grammophorus bruchi, Argentina, p. 71, *minor*, Chili, p. 72, SCHWARZ, Deutsche ent. Zeitschr. 1904, **n. spp.**
Horistonotus bicolor, Sydney, RAINBOW, p. 246, Rec. Austral. Mus. v, **n. sp.**
Ischiodontus laterus, p. 55, *testaceus*, p. 56, *æneus*, p. 57, *bivittatus*, p. 58, *ellipticus*, p. 59, S. America, SCHWARZ, Deutsche ent. Zeitschr. 1904, **n. spp.**
Isidus; characters and position, DU BUYSSON, p. 7, Rev. Ent. franc. xxiii.
Ludius, cf. *Corymbitodes*.
Melanoxanthus picturatus, New Caledonia, FAUVEL, p. 131, Rev. Ent. franc. 1904, **n. sp.**
Monocrepidius brachypterus, Lifu, FAUVEL, p. 127, t. c.; *M. chilensis*, Chili, SCHWARZ, p. 70, Deutsche ent. Zeitschr. 1904 : **n. spp.**
Ochosternus pacificus, *cribriceps*, p. 134, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
Pomachilius brevicornis, Brazil, SCHWARZ, p. 61, Deutsche ent. Zeitschr. 1904; *P. fulvescens*, *apicatus*, p. 73, *preterminatus*, *scriptus*, p. 74, mul-

timaculatus, p. 75, *variegatus*, p. 76, *cinctipennis*, p. 77, *krugi*, *polygrammus*, p. 78, S. America, SCHWARZ, t. c. : **n. spp.**
Semiotus subvirescens, Ecuador, p. 49, *alternatus*, Venezuela, p. 50, SCHWARZ, t. c. **n. spp.**

RHIPICERIDÆ and DASCILLIDÆ.

[Cf. FAIRMAIRE (474, 476, 478), FAUVEL (486).]

Agathorhipis **n. g.** *Rhipiceridæ*, *A. bifossata* **n. sp.**, New Caledonia, FAUVEL, p. 136, Rev. Ent. franc. 1904.

Cladotoma bruchii, Tucuman, FAIRMAIRE, p. 61, Bull. Soc. ent. France 1904; *C. russula*, p. 154, *maculicollis*, p. 155, Brazil, FAIRMAIRE, t. c. : **n. spp.**

Eubrianax insignis, Indo China, FAIRMAIRE, p. 87, Mission Pavie iii, **n. sp.**
Pseudolichas nivipictus, Laos, FAIRMAIRE, p. 86, t. c. **n. sp.**

MALACODERMIDÆ.

[Cf. BOURGEOIS (160, 161), FAIRMAIRE (473), FAUVEL (486), FIORI (509), PIC (1055, 1058, 1060, 1062, 1065, 1066, 1068, 1071, 1074, 1075, 1077), REITTER (1152), SCHAEFFER (1220), TOWNSEND (1392).]

Malacodermidæ, collected by BURCHELL in S. Africa and Brazil, BOURGEOIS (161).

Gigantic larva, *Lampyrides*, described, LUCAS, p. 104, Mission Pavie iii.
 Light-organ, *Photinus*, TOWNSEND (1392).

Acanthocnemus = (*Eurema* Ab. = *Hovacnemus* Fairm.), there is only one species known, BOURGEOIS, pp. 25, 26, Bull. Soc. ent. France 1904.

Anthonomus [sic] *martini*, Natal, PIC, p. 27, Echange 1904, **n. sp.**

Astylus longipennis, Brazil, PIC, p. 29, t. c. **n. sp.**

Attalus africanus, Natal, PIC, p. 28, t. c. ; *A. (Mixis) rufithorax*, S. Africa, PIC, p. 33, t. c. : **n. spp.**

Balanophorus macleayi, pl. iv, fig. 8, p. 91; LEA, P. Linn. Soc. N. S. Wales xxix.

Calosotis? barkeri, Natal, PIC, p. 66, Echange xx, **n. sp.**

Cantharis livida var. *n. varendorffi*, REITTER, p. 159, Wien. ent. Zeit. xxiii;
C. brachypterus ♀; *malatiensis* var. *n. detectiventris*, PIC, p. 71, Bull. Soc. ent. France 1904.

C. ponticus, cilicius, Asia Minor, PIC, p. 9, Echange ix; *C. raddensis*, Amurland, PIC, p. 26, Echange 1904 : **n. spp.**

Celes burchelli, Brazil, BOURGEOIS, p. 93, Ann. Nat. Hist. xiii, **n. sp.**

Cenophengus? pallidus, Texas, SCHAEFFER, p. 213, J. N. York Ent. Soc. xii, **n. sp.**

Chlamydolycus burchelli, S. Africa, BOURGEOIS, p. 91, Ann. Nat. Hist. xiii, **n. sp.**

Cyrtosus subcylindricus, Syria, PIC, p. 3, Echange 1904; *C. diversicornis*, Algeria, PIC, p. 34, t. c. : **n. spp.**

Danacea martini, Spain, p. 2, *holtzi*, Taurus, p. 3, PIC, t. c. ; *D. tauricola, nitidissima*, Taurus, PIC, p. 73, t. c. : **n. spp.**

Dichelotarsus sulcithorax, Japan, PIC, p. 26, t. c. **n. sp.**

Drilus? kandyanus, Ceylon, BOURGEOIS, p. 481, Ann. Soc. ent. France 1903, **n. sp.**

Ebaeomorphus **n. g.** *E. ramicornis* **n. sp.**, Natal, PIC, p. 28, Echange 1904.

Ebaeus italicus, Rome, REITTER, p. 159, Wien. ent. Zeit. xxiii; *E. amurensis*, Amur, PIC, p. 50, Echange xx; *E. bahiensis*, Brazil, PIC, p. 28, t. c. : **n. spp.**

Eurema, cf. *Acanthocnemus*.

- Hapalochrous martini*, Natal, PIC, p. 28, Echange 1904 ; *H. appendicifer*, Cape Colony, PIC, p. 34, t. c. : **n. spp.**
- Henicopus plumbeus, pilosus*, distinctions, MÜLLER, p. 174, Wien. ent. Zeit. xxiii.
- Hovacnemus*, cf. *Acanthocnemus*.
- Idgia puncticollis*, S. India, BOURGEOIS, p. 483, Ann. Soc. ent. France 1903, **n. sp.**
- Luciola xanthochroa*, Madagascar, FAIRMAIRE, p. 236, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Malachius akbesianus* ♂, PIC, p. 216, Bull. Soc. ent. France 1904.
- M. cressius*, Crete, PIC, p. 10, Echange 1904 ; *M. elaphus*, ♀, PIC, p. 42, Bull. Soc. ent. France 1904 ; *M. lusitanicus*, habits, larva, XAMBEU, pp. 58-63, Soc. Pyrenees-or. xlv ; *M. arctelimbatus*, p. 287, *japonicus*, p. 288, Japan, PIC, Bull. Soc. ent. France : **n. spp.**
- Malthinus flavicollis*, Spain, PIC, p. 4, Echange 1904 ; *M. (Progeutes) drurei*, Bagdad, PIC, t. c. : **n. spp.**
- Malthodes (Podistrina) arbaensis*, Tunis, PIC, p. 3, Echange 1904 ; *M. holtzi*, Crete, PIC, p. 9, t. c. ; *M. malcolmi*, Malta, PIC, p. 49, t. c. ; *M. (Malthinellus) messenius*, p. 74, *M. (Podistrina) raguse*, p. 75, Sicily, FIORI, Natural. Sicil. xvii : **n. spp.**
- Megalophthalmus ptiliniformis*, Pará, BOURGEOIS, p. 98, Ann. Nat. Hist. xiii, **n. sp.**
- Melyris crenicollis*, Algeria, PIC, p. 90, Echange xx, **n. sp.**
- Neocarpurus impunctatus*, pl. iv, fig. 9, p. 91, LEA, P. Linn. Soc. N. S. Wales xxix.
- Pagurodactylus? apicalis*, Natal, PIC, p. 66, Echange xx, **n. sp.**
- Paraptorthodius* **n. g.** near *Ptorthodius*, *P. mirabilis* **n. sp.**, Texas, SCHAEFFER, p. 212, J. N. York Ent. Soc. xii.
- Plateros variocostatus*, Brazil, BOURGEOIS, p. 94, Ann. Nat. Hist. xii, **n. sp.**
- Platycis cosnardi raddensis* subsp. n., PIC, p. 25, Echange 1904.
- Podabrus rosinae*, Amurland, PIC, p. 25, t. c. **n. sp.**
- Pseudocolotes capensis, notatithorax*, S. Africa, PIC, p. 11, t. c. **n. spp.**
- Rhagonycha ericeti* and allies, PIC, p. 54, t. c.
- Selasia maindroni*, Genji, BOURGEOIS, p. 482, Ann. Soc. ent. France 1903, **n. sp.**
- Semijulistus*, characters and components, SEMENOV, p. 121, Rev. Russe Ent. iv.
- Silis nigrifrons*, Madagascar, FAIRMAIRE, p. 237, Ann. Soc. ent. Belgique xlviii ; *S. maindroni*, Nilgiri Hills, BOURGEOIS, p. 480, Ann. Soc. ent. France 1904 : **n. spp.**
- Sphinginopalpus martini*, Natal, PIC, p. 12, Bull. Soc. ent. France 1904 ; *S. barkeri, formicoides, limbatus*, S. Africa, PIC, p. 65, Echange xx : **n. spp.**
- Telephorus fuscus*, larval habits, REMER, pp. 12, 13, Jahresber. Schlesisch. Ges. 1903, zool.-bot. sekt.
- Tylocerus apicalis*, Ceylon, BOURGEOIS, p. 479, Ann. Soc. ent. France 1903, **n. sp.**
- Tytthonyx ruficollis*, Texas, SCHAEFFER, p. 214, J. N. York Ent. Soc. xii, **n. sp.**
- Xamerpus rubronotatus*, Madagascar, PIC, p. 11, Echange 1904 ; *X. obscurus*, Natal, PIC, p. 28, t. c. : **n. spp.**

CLERIDÆ.

[Cf. FAUVEL (486), HOULBERT & BÉTIS (721), SCHAEFFER (1220), SCHENK-LING (1226).]

- Clerus palmii*, Arizona, SCHAEFFER, p. 218, J. N. York Ent. Soc. xii, **n. sp.**
- Colyphus furcatus*, Texas, SCHAEFFER, p. 218, t. c. **n. sp.**

- Cymatodera peninsularis*, Lower California, p. 214, *obliquefasciata*, p. 215, *fuchsii*, Texas, *latefascia*, Arizona, p. 216, *vandykei*, California, p. 217, SCHAEFFER, t. c. : **n. spp.**
- Enoplium granulatiptenne*, p. 220, *nigrescens*, p. 221, Texas, SCHAEFFER, t. c. : **n. spp.**
- Hydnocera tricolor*, Texas, SCHAEFFER, p. 219, t. c. **n. sp.**
- Ommadius diversicollis*, New Caledonia, FAUVEL, p. 146, Rev. Ent. franc. 1904, **n. sp.**
- Pelonium maculicolle*, Texas, SCHAEFFER, p. 219, J. N. York Ent. Soc. xii, **n. sp.**
- Phlæocopus*, monograph, SCHENKLING, pp. 169–186, Ann. Mus. Genova xli.
- P. verticalis*, Somaliland, p. 183, *obscurus*, Madagascar, p. 186, id. t. c. **n. spp.**
- Trichodes kraatzi* var. = (*turkestanicus*), HINTZ, p. 420, Deutsche ent. Zeitschr. 1904 ; *T. kraatzi* and *turkestanicus*, distinguished, REITTER, p. 259, Wien. ent. Zeit. xxiii.

PTINIDÆ.

- [Cf. FAUVEL (486), PÉRINGUEY (1028), PIC (1052, 1054, 1060, 1062, 1064, 1067, 1068), REITTER (1149).]
- Cathorama diversistriata*, p. 56, *rudepunctata*, *argentina*, S. America, *rubriventris*, Mexico, p. 57, *thecaoides*, *tijucana*, *holosericea*, *fulvopubens*, *subpubescens*, p. 103, *minutissima*, p. 104, S. America, PIC, Naturaliste 1904 ; *C. baeri*, Peru, PIC, p. 19, Echange 1904 : **n. spp.**
- Ernobius incisus*, S. France, PIC, p. 2, t. c. **n. sp.**
- Eupactus* = (*Thaptor* Gorh.), PIC, p. 31, t. c.
- E. cribripennis*, *gibbosiceps*, *subopacus*, p. 31, *nigromaculatus*, *brunneonotatus*, *argentifer*, p. 32, Brazil, PIC, t. c. ; *E. subnotatus*, *brunneus*, p. 36, *gounellei*, *barranus*, *bahiensis*, *minasensis*, *brevis*, *nigricolor*, *subattenuatus*, *rufonitens*, *humilis*, p. 37, Brazil, PIC, t. c. ; *E. donckieri*, Mexico, *funki*, *distinctipennis*, S. America, PIC, p. 19, t. c. **n. spp.**
- Eurostus cylindricornis*, Asia Minor, REITTER, p. 81, Wien. ent. Zeit. xxiii, **n. sp.**
- Leptothea* **n. g.** *Dorcatomini*, p. 151, *laticornis* **n. sp.**, New Caledonia, p. 152, FAUVEL, Rev. Ent. franc. 1904.
- Mesocaelopus rufithorax*, Congo, PIC, p. 12, Echange 1904 ; *M. venezuelensis* ["me paraît devoir rentrer dans le genre *Eupactus*"!], Venezuela, *sumatrensis*, Sumatra, PIC, p. 19, Echange 1904 : **n. spp.**
- Ozognathus inarmatus*, *rufescens*, Chili, PIC, p. 18, t. c. **n. spp.**
- Priotoma peruviana*, *flaviventris*, S. America, PIC, p. 19, t. c. **n. spp.**
- Ptinus tectus*, habits, CHAMPION, p. 85, Ent. Mag. xl.
- P. elegans*, Natal, PÉRINGUEY, p. 225, Ann. S. African Mus. iii ; *P. multi-maculatus*, p. 226, *decorsei*, p. 227, Madagascar, PIC, Bull. Mus. Paris 1904 ; *P. falli*, N. America, PIC, p. 19, Echange 1904 ; *P. gandolphei*, *paulonotatus*, N. America, PIC, p. 34, t. c. : **n. spp.**
- Thaptor sublineatus*, Chili, *australiensis*, Australia, *mexicanus*, Mexico, PIC, p. 18, t. c. **n. spp.**
- Theca oneili*, S. Africa, *pruinosa*, Madagascar, PIC, p. 11, t. c. ; *T. figurata*, New Caledonia and New Hebrides, p. 152, *semirufa*, New Caledonia, p. 153, FAUVEL, Rev. Ent. franc. 1904 : **n. spp.**

BOSTRYCHIDÆ.

[Cf. FAUVEL (486), LESNE (876).]

LESNE gives addenda and corrigenda to his Palearctic *Bostrychidæ*, with 2 **n. spp.**, ABEILLE, pp. 153–168, pls. iii, iv, Abeille xxx.

Catalogue of Australian *Bostr.* with localities, LEA, pp. 91-93, P. Linn. Soc. N. S. Wales xxix.

Apatodes Blackb. = (*Xylobosca* Lesne), LEA, p. 92, t. c.

Coccographis nigrorubra, pl. ix bis, fig. 6, p. 107, LESNE, Mission Pavie iii.

Lyctus canaliculatus, habits, parasites, BEYER, p. 30, J. N. York Ent. Soc. xii.

L. punctipennis, New Caledonia, Sumatra, FAUVEL, p. 155, Rev. Ent. franc. 1904, **n. sp.**

Sinoxylon pugnax, E. India etc., LESNE, p. 159, Abeille xxx, **n. sp.**

Xylogenes semenovi, Centr. Asia, LESNE, p. 158, t. c. **n. sp.**

CIOIDÆ.

Cherostus cornutus, St. Vincent, p. 31, *jamaicensis*, Jamaica, 32, ARROW, Ann. Nat. Hist. xiv, **n. spp.** [These Insects, as well as *Rhipidandrus*, are *Tenebrionidæ* and will in future be there recorded. D. S.]

Cis notatus, p. 160, *litteratus*, *biscutatus*, p. 161, *cribrellus*, *porcellus*, *micros*, p. 162, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**

Ennearthron nigricans, New Caledonia, FAUVEL, p. 163, t. c. **n. sp.**

TENEBRIONIDÆ and RHYSOPAUSSIDÆ.

[Cf. ARROW (39), BROUN (184), CHITTENDEN (266), DEMAISON (360), FAIRMAIRE (476), FAUVEL (486), GEBIEN (589, 590), KOLBE (830), MÜLLER (972), PÉRINGUEY (1028, 1029), POPPIUS (1094), REITTER (1155).]

Rhysopausidæ, note on position, WASMANN, p. 5, Jägerskiöld exp. No. 13.

Acanthomera cursor, Cape Colony, PÉRINGUEY, p. 252, Ann. S. African Mus. iii, **n. sp.**

Acastus seabakuensis, S. Africa, PÉRINGUEY, p. 260, t. c. **n. sp.**

Adelium pustulosum, New Caledonia, FAUVEL, p. 189, Rev. Ent. franc. 1904, **n. sp.**

Adesmia (*Macropoda*) *khoikoina*, *damara*, p. 226, *A. (Onymachrys) laskeri*, p. 227, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**

Akis spinosa **var. n. ragusæ**, REITTER, p. 97, Natural. Sicil. xvii.

Aleyonotus purpuripennis, Cameroons, GEBIEN, p. 22, Arkiv Zool. ii, No. 5, **n. sp.**

Almyon prolatus Pasc. = (*Ghaleca leta* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.

Alphitophagus obtusangulus, Dalmatia, MÜLLER, p. 209, Munchen. Kol. Zeitschr. ii, **n. sp.**

Amenophis; table of species; *A fairmairei* = (*mechowi* Kolbe), GEBIEN, p. 17, Arkiv Zool. ii, No. 5.

A. angustata, *epipleuralis*, Cameroons, GEBIEN, t. c. **n. spp.**

Ametrocera = (*Idricus* Fairm.), *A. aurita* = (*I. pacificus* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.

Amiantus pusillus, Transvaal, PÉRINGUEY, t. c. **n. sp.**

Anatolica hammarstromi, Mongolia, POPPIUS, p. 12, Ofv. Finska Forh. xlv, No. 16, **n. sp.**

Anchophthalmus indigus, *algoensis*, p. 237, *plicipennis*, p. 238, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**

Anomalipus granatus Fairm. = (*marshalli* Pér.), *A. obscurus* Oliv. = (*notaticollis* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.

A. spectandus, p. 449, *deceptor*, *amplipennis*, *selatinus*, p. 450, Transvaal, PÉRINGUEY, Nov. Zool. xi; *A. mashunus*, pl. xiii, fig. 10, *gasanus*, fig. 9, p. 239, *barbertoniensis*, p. 240, *pauxillus*, *hypocrita*, p. 241, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**

- Aphrotus* **n. n.** for *Xenus* Pér., *A. abortus* **n. sp.**, Namaqualand, PÉRINGUEY, p. 252, t. c.
- Arrhenoplita* **n. g. ensifera** **n. sp.**, New Caledonia, FAUVEL, p. 173, Rev. Ent. franc. 1904.
- Asemogena* **n. g.** near *Praogena*, *A. simplex*, p. 281, *humilis*, p. 282, **n. spp.**, Cape Colony, PÉRINGUEY, Ann. S. African Mus. iii.
- Bolitotherus cordicollis*, p. 167, *caneroides*, p. 168, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Cædus globosus*, New Caledonia, FAUVEL, p. 166, t. c. **n. sp.**
- Calostega cylindrica*, Congo, GEBIEN, p. 175, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Catamergus manicatus*, p. xiii, fig. 3, p. 250, *gasanus*, fig. 12, p. 251, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Ceramba* **n. g.** near *Episopus*, *hydrovatina* **n. sp.**, New Caledonia, FAUVEL, p. 206, Rev. Ent. franc. 1904.
- Ceropria*; characters of African; *C. romandi* = (*janthina* Th. = *westermanni* Fahr. = *viridis* Kr.), *C. anthracina* Quedf. nec Lac., pl. ii, fig. 8, GEBIEN, pp. 9, 10, Arkiv Zool. ii, No. 5.
- C. cærulea*, New Caledonia, FAUVEL, p. 171, Rev. Ent. franc. 1904, **n. sp.**
- Cherostus* and *Rhipidandrus*, cf. *Cioidea*.
- Cilibe asidæformis*, New Caledonia, FAUVEL, p. 188, Rev. Ent. franc. 1904, **n. sp.**
- Cymbeba bavayi*, p. 194, *sulcipennis*, *muscorum*, p. 195, *indigacea*, *planipennis*, p. 196, New Caledonia, FAUVEL, t. c. **n. spp.**
- Derosimus* **n. g.** near *Adelostema*, *D. quadricollis* **n. sp.**, Buenos Ayres, FAIRMAIRE, p. 62, Bull. Soc. ent. France 1904.
- Derosphærus globicollis* = (*Nyctobates rotundicollis* Westw. = *Notiolesthus morosus* Motsch.), GEBIEN, p. 18, Arkiv Zool. ii, No. 5.
- Diaclina picta*, New Caledonia, FAUVEL, p. 184, Rev. Ent. franc. 1904, **n. sp.**
- Dichastops mashunus*, S. Africa, PÉRINGUEY, p. 244, Ann. S. African Mus. iii, **n. sp.**
- Diestesoma* **n. g.** near *Strongylium*, p. 271, *D. pulchrum* **n. sp.**, Cape Colony, p. 272, PÉRINGUEY, t. c.
- Dorelogena* **n. g.** near *Praogena*, *D. castanea*, p. 280, *angusta*, p. 281, **n. spp.**, Rhodesia, PÉRINGUEY, t. c.
- Dysgena durbania*, p. 276, *decepiens*, *plebeia*, p. 277, *delagoana*, *foceaticollis*, p. 278, *capicola*, *luctuosa*, *servilis*, p. 279, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Endustomus sudanensis*, White Nile, WASMANN, pl. i, fig. 3, p. 10, Jägerskiöld exp. No. 13; *E. rhodesianus*, S. Africa, PÉRINGUEY, p. 242, Ann. S. African Mus. iii : **n. spp.**
- Epipedonota strigosicollis*, Catamarca, FAIRMAIRE, p. 63, Bull. Soc. ent. France 1904, **n. sp.**
- Episopus cavipennis*, p. 203, *championi*, *viridipennis*, p. 204, *violaceipennis*, p. 205, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Eupæzus minor*, Cameroons, GEBIEN, p. 25, Arkiv Zool. ii, No. 5, **n. sp.**
- Gonocnemis jagerskiöldi*, Soudan, WASMANN, p. 7, pl. i, fig. 2, Jägerskiöld exp. No. 13, **n. sp.**
- Hæmus* **n. g.** near *Machla*, p. 228, *H. carinatipennis* **n. sp.**, Rhodesia, p. 229, PÉRINGUEY, Ann. S. African Mus. iii.
- Hemipristis kraatzi*, Tanganyika, GEBIEN, p. 127, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Herpiscius damarinus*, S. Africa, PÉRINGUEY, p. 229, Ann. S. African Mus. iii, **n. sp.**
- Hoplongx evanescens*, pl. ii, fig. 5, p. 33, *cameruna*, p. 24, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5; *H. termitophilus*, Soudan, WASMANN, pl. i, fig. 7, p. 9, Jägerskiöld exp. No. 13; *H. insignis*, *granulipennis*, p. 255, *perforatus*, *extraneus*, p. 256, *gratulus*, *refertus*, p. 257, *pudens*,

- spectandus*, p. 258, *amœnus*, *probus*, p. 259, *luscus*, p. 260, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**
- Hyocis championi*, New Caledonia and New Hebrides, FAUVEL, p. 166, Rev. Ent. franc. 1904, **n. sp.**
- Hypamarygmus* **n. g.** p. 27, *H. coccinelloides* **n. sp.** Cameroons, p. 28, pl. ii, fig. 6, GEBIEN, Arkiv Zool. ii, No. 5.
- Iscanus* **n. g.** near *Lorelus*, p. 176, *kuniensis* **n. sp.**, New Caledonia, p. 177, FAUVEL, Rev. Ent. franc. 1904.
- Isopus kanak*, p. 198, *obtusius*, p. 199, *productus*, p. 200, *apicipennis*, *sulcifer*, p. 201, *morychoides*, p. 202; New Caledonia, FAUVEL, t. c. **n. spp.**
- Latheticus prosopis*, Arizona etc., CHITTENDEN, p. 167, J. N. York Ent. Soc. xii, **n. sp.**
- Lorelus ocularis*, New Caledonia, FAUVEL, p. 178, Rev. Ent. franc. 1904, **n. sp.**
- Lyprochelida picta*, Cameroons, pl. ii, fig. 4, p. 20, GEBIEN, Arkiv Zool. ii, No. 5, **n. sp.**
- Lyprops mosambicus*, *namaquensis*, S. Africa, PÉRINGUEY, p. 243, Ann. S. African Mus. iii, **n. spp.**
- Machla mendica* (= *Asida natalica* Pér. = *M. echinodermata* Fairm.), PÉRINGUEY, p. 296, t. c.
- Machleida nodulosa* (= *Asida legitima* Pér.), PÉRINGUEY, p. 296, t. c.
- Melasia apicipennis*, *fortestriata*, p. 180, *punctata*, *microcephala*, p. 181, *opacipennis*, *isoceroïdes*, p. 182, *miriceps*, p. 183, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
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- Metallonotus splendens*, E. Africa, GEBIEN, p. 318, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Micrantereus capicola*, *procursus*, pl. xiii, figg. 1, 2, p. 245, *zoutpansbergianus*, fig. 8, p. 246, *lydenburgiensis*, fig. 7, *gasanus*, figg. 5, 6, p. 247, *hirsutus*, fig. 4, p. 248, *vicarius*, p. 249, fig. 3, S. Africa; PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Mimocellus* **n. g.** near *Lyprops*, p. 11, *M. trechoïdes*, Sudan, pl. i, fig. 5, *braunsi*, Bothaville, **n. spp.**, p. 12, WASMANN, Jägerskiöld exp. No. 13.
- Moluris mulleri*, to *Psammodes*, PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Nannocerus angustulus*, p. 270, *beiranus*, p. 271, Mozambique; PÉRINGUEY, t. c. **n. spp.**
- Nesogena caffra*, S. Africa, PÉRINGUEY, p. 262, t. c. **n. sp.**
- Nyctelia grandis*, *vageimpressa*, p. 62, *rotundipennis*, *quadriplicata*, p. 63, S. America, FAIRMAIRE, Bull. Soc. ent. France 1904, **n. spp.**
- Oochrotus glaber*, Asia Minor, DEMAISON, p. 287, Bull. Soc. ent. France 1904, **n. sp.**
- Opatrinus opacus*, Cameroons, fig. 2, p. 4, GEBIEN, Arkiv Zool. ii, No. 5, **n. sp.**
- Païta* **n. g.** near *Menimus*, *setosella* **n. sp.**, Noumea, FAUVEL, p. 173, Rev. Ent. franc. 1904.
- Palorus luxipunctus*, New Caledonia, FAUVEL, p. 176, t. c. **n. sp.**
- Paragonocnemis tragaordhi*, Soudan, WASMANN, pl. i, fig. i, p. 8, Jägerskiöld exp. No. 13, **n. sp.**
- Paramarygmus figuratus*, Cameroons, GEBIEN, p. 28, Arkiv Zool. ii, No. 5; *P. gratulus*, *amœnus*, p. 261, *gratiosus*, p. 262, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**
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- Perichilus ditissimus*, S. Africa, PÉRINGUEY, p. 270, Ann. S. African Mus. iii, **n. sp.**
- Pheugonius giganteus*, Borneo, GEBIEN, p. 157, Deutsche ent. Zeitschr. 1904, **n. sp.**

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- Phymatosoma rutilans*, Laos, FAIRMAIRE, p. 88, Mission Pavie iii, **n. sp.**
- Platynosum sabulorum*, characters, CHABAUT, p. 283, Bull. Soc. ent. France 1904.
- Platydemus tomentosus*, *nigrobrunneum*, p. 5, *hollmi*, fig. 3, p. 6, *schroderi*, fig. 4, p. 7, *abnorme*, fig. 5, p. 8, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5, **n. spp.**
- Praogena cyaneipennis*, p. 273, *ditissima*, *affinis*, p. 274, *natalensis*, *capicola*, *bechuana*, p. 275, *gloriosa*, *timida*, p. 276, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Priscoscelis thomsoni*, GEBIEN, p. 148, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Prosodes mithras*, Persia, REITTER, p. 258, Wien. ent. Zeit. xxiii, **n. sp.**
- Psammodius volvulus*=(*adventitus* Pér.), *P. valens* Pér.=(*cinctipennis* Fairm.), *P. rugulosus* Sol.=(*exilis* Pér.), *P. tricoloratus* Fahr.=(*præstans* Pér.), *P. junodi* Pér.=(*junodi* Fairm.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- P. discrepans*, p. 230, *damarinus*, *zoutpansbergianus*, pl. xiii, fig. 14, p. 231, *fartus*, p. 232, *illotus*, p. 233, S. Africa, PÉRINGUEY, t. c. : *P. rehbocki*, p. 299, *erthi*, p. 300, *spinosocostatus*, p. 302, Africa, KOLBE, Berlin. ent. Zeitschr. xlix : **n. spp.**
- Psectrascelis cariosicollis*, Catamarca, FAIRMAIRE, p. 64, Bull. Soc. ent. France 1904, **n. sp.**
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- Pycnocerus rugosus*, p. 343, *gracilis*, p. 344, W. Africa, GEBIEN, t. c. **n. spp.**
- Scythis rectangulus*, Mongolia, POPPIUS, p. 14, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Selinus convexipennis*, fig. 1, p. 2, *calcaripes*, p. 3, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5, **n. spp.**
- Sipirocus kolbei*, Java, GEBIEN, p. 169, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Sphenaria* synonymy, of Semenow's species, REITTER, pp. 24, 25, Wien. ent. Zeit. xxiii.
- Stenocara albicollis*=(*distincta* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
- S. jurgatrix*, Namaqualand, PÉRINGUEY, p. 227, t. c. **n. sp.**
- Strongylium sulcipenne*=(*Xanthotopia fuscocyanescens* Fairm.), PÉRINGUEY, p. 297, t. c. ; *S. cyanipes*=(*nigrum* Dohrn), GEBIEN, p. 29, Arkiv Zool. ii, No. 5.
- S. perturbator*, *indigenus*, p. 263, *rhodesianum*, *ovampoense*, p. 264, *lætum*, *discrepans*, p. 265, *algoense*, *imitator*, p. 266, *natalense*, p. 267, *auspicatum*, *plausibile*, p. 268, *lætum*, *cælatum*, p. 269, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Syrphetodes nodosalis*, New Zealand, BROUN, p. 56, Ann. Nat. Hist. xiv, **n. sp.**
- Taraxides sinuatus*, variation and synonymy, GEBIEN, p. 13, 14, Arkiv Zool. ii, No. 5.
- Tenebrio guineensis*=(*foveicollis* Thoms.), GEBIEN, p. 19, t. c.
- Toxicum taurus*=*tenuiclavum* Schauf.=?*nitidifrons* Schauf.), GEBIEN, p. 13, t. c.
- Trachynotideus damarinus*, S. Africa, PÉRINGUEY, p. 233, Ann. S. African Mus. iii, **n. sp.**
- Trachynotus rufizonatus*=(*manifestus* Pér.), PÉRINGUEY, p. 297, t. c.
- Trachynotus stali*=(*latemarginatus* Pér.), *T. silphoides*=(*plicipennis* Pér.), *T. pygmeus*=(*tantillus* Pér.), *T. frontalis* Haag=(*Epairops levigata* Pér.), PÉRINGUEY, t. c.

- T. resolutus*, Transvaal, PÉRINGUEY, p. 234, t. c. **n. sp.**
Uroma sjoestedti, Cameroons, fig. 6, p. 10, GEBIEN, Arkiv Zool. ii, No. 5, **n. sp.**
Vutsimus propinquus, p. 253, *byzacnoides*, p. 254, Transvaal, PÉRINGUEY,
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 p. 32.
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[Cf. GERHARDT (591, 592), PIC (1058, 1065, 1075).]

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I. arenaria, Germany, GERHARDT, p. 366, Deutsche ent. Zeitschr. 1904,
 and p. 79, Zeitschr. Ent. Breslau xxix; *I. testaceicornis*, Vladivostock,
 PIC, p. 26, Echange 1904 : **n. spp.**
Oteniopus, sulphureus L.=(*flavus* Scop.), BEDEL, p. 152, Abeille xxx.
C. tokatensis, Tokat, PIC, p. 26, Echange 1904, **n. sp.**
Microcistela n. g. M. rosine **n. sp.**, Amurland, PIC, p. 26, t. c.
Mycetochara (Ernochuris) striatipennis, Amanus, PIC, p. 74, t. c. **n. sp.**
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 p. 289, *imitatrix*, p. 290, *lydenburgiana*, *promontorii*, p. 291, *vittati-*
pennis, p. 292, *cupicola*, *elizabethæ*, p. 293, *plumbea*, *impressicollis*,
 p. 294, *annectens*, p. 295, S. Africa, PÉRINGUEY, Ann. S. African Mus.
 iii, **n. spp.**

ANTHICIDÆ, PEDILIDÆ.

[Cf. CASEY (248), PIC (1053, 1054, 1057, 1060, 1062, 1064, 1068, 1070, 1075,
 1076, 1078).]

- Anthicus ragazzii* var. *n. micheli*, PIC, p. 121, Bull. Mus. Paris 1904.
A. tarifanus, Spain, PIC, p. 4, Echange 1904; *A. escalerae*, *uhagoni*, Spain,
balearicus, Balearic Ids., PIC, p. 81, t. c.; *A. boyadjeani*, p. 73,
tauricus, p. 74, Asia Minor, PIC, t. c.; *A. (Aulacoderus) citernii*,
 Somali Land, PIC, p. 92, Ann. Mus. Genova xli; *A. basinotatus*,
tuberculatus, *cæruleipennis*, S. Africa, PIC, p. 12, Echange 1904; *A.*
floridanus, *plectrinus*, N. America, CASEY, p. 320, Canad. Ent. xxxvi;
A. chevaleri, Niger, *guyanensis*, French Guiana; PIC, p. 121, Bull.
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minasensis, p. 44, *A. sculptus*, *bicallosus*, *finitimus*, p. 45, Brazil, PIC,
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Euvacus n. g. p. 318, *E. coloradanus n. sp.*, Colorado, p. 319, CASEY,
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F. elegans, *postalis* and *obliquifasciatus* to *Anthicus*, LEA, p. 95,
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F. armipes, *decorsei*, Madagascar, *potteri*, Abyssinia, PIC, p. 120, Bull. Mus.
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- Hytophilus*; this name cannot be used for *Col.*, CHAMPION, p. 85, Ent. Mag. xl.
H. grandis, S. Africa, PIC, p. 12, Echange 1904; *H. angusticollis, decorsei*, Madagascar, PIC, p. 72, Bull. Soc. ent. France 1904 : **n. spp.**
Leptoremus **n. g.** p. 314, *L. argenteus* **n. sp.**, California, p. 315, CASEY, Canad. Ent. xxxvi.
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Scraptia chinensis, Tien-tsin, PIC, p. 20, Echange 1904, **n. sp.**

RHIPIPHORIDÆ and STYLOPIDÆ.

[Cf. BROUN (184), CHOBOUT (269), FAIRMAIRE (478), LEA (864), PIC (1074, 1077), PIERCE (1086).]

- Ancholenus acuminatus*, Brazil, FAIRMAIRE, p. 155, Bull. Soc. ent. France 1904, **n. sp.**
Blattivorus **n. g.** (?) for *Rhipidius lusitanicus*, CHOBOUT, p. 230, Bull. Soc. ent. France 1904.
Dunbrodianus **n. g.** near *Euctenia*, *D. longicollis* **n. sp.**, Cape Colony, PIC, p. 66, Echange xx.
Emenadia pictipennis, Queensland, *semipunctata*, N. W. Australia, LEA, p. 97, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
Evaniocera pallidipennis, N. W. Australia, LEA, p. 99, t. c. **n. sp.**
Myiodes syriacus, Amanus, PIC, p. 90, Echange xx, **n. sp.**
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Rhipidius; table of species, CHOBOUT, p. 230, Bull. Soc. ent. France 1904.
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Rhipiphorus; table of North American, PIERCE, p. 164, Stud. Univ. Nebraska iv.
R. acutipennis, Nebraska, PIERCE, p. 163, t. c. **n. sp.**
Rhyppistena cryptarthra, p. 58, *sulciceps*, p. 59, New Zealand, BROUN, Ann. Nat. Hist. xiv, **n. spp.**
Xenos?, from *Andrena*, p. 169, *X. pulvinipes*, from *Panurginus*, Nebraska, PIERCE, p. 167, Stud. Univ. Nebraska iv, **n. sp.**
The triunguloids—first larva—of *Rhip.* and *Stylop.*, PIERCE, pp. 170 etc., t. c.

MORDELLIDÆ.

- Mordella*; variation of Australian, LEA, pp. 95, 96, P. Linn. Soc. N. S. Wales xxix.
Mordellistena arabica, Mazerah, CHOBOUT, p. 244, Bull. Soc. ent. France 1904, **n. sp.**

CANTHARIDÆ or MELOIDÆ.

- [Cf. ESCHERICH (469), PÉRINGUEY (1028), PIERCE (1086), SKINNER (1302).]
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Calospasta wenzeli, Arizona, SKINNER, p. 217, Ent. News Philad. xv, **n. sp.**

- Ctenopus lama*, East Turkestan, ESCHERICH, p. 35, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Decatoma vexator*, *transvaalica*, Transvaal, PÉRINGUEY, p. 284, Ann. S. African Mus. iii, **n. spp.**
- Epicauta adpersa*, injurious in Argentina, BRÈTHES (182).
- E. abadona*, *alastor*, Arizona, SKINNER, p. 217, Ent. News Philad. xv, **n. spp.**
- Hapalus* (*Stenoria*) *hauseri*, p. 34, *tibetana*, Kuku-noor, *H. (Sitaris) pallens*, p. 35, Turkestan, ESCHERICH, Munchen. Kol. Zeitschr. ii, **n. spp.**
- Lagorina* (?) *mus*, Algeria, ESCHERICH, p. 32, t. c. **n. sp.**
- Lytta pæciloptera* var. *n. satiata*, ESCHERICH, p. 31, t. c.
- L. tibetana*, Kuku-noor, ESCHERICH, p. 30, t. c.; *L. damarina*, *spilotella*, S. Africa, PÉRINGUEY, p. 286, Ann. S. African Mus. iii : **n. spp.**
- Meloë intermedius*, Turkestan, ESCHERICH, p. 30, Munchen. Kol. Zeitschr. ii; *M. rhodesianus*, S. Africa, PÉRINGUEY, p. 282, Ann. S. African Mus. iii : **n. spp.**
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- M. lucens*, p. 32, *voigtsii*, p. 33, *aurora*, p. 34, Turkestan, ESCHERICH, t. c.; *M. (Ceroctis) mosambica*, Lourenço-Marques, PÉRINGUEY, p. 283, Ann. S. African Mus. iii : **n. spp.**
- Paractenodia* **n. g.** near *Actenodia*, *P. parva* **n. sp.**, Cape Colony, PÉRINGUEY, p. 285, Ann. S. African Mus. iii.

ÆGIALITIDÆ, PYROCHROIDÆ, PYTHIDÆ, ŒDEMERIDÆ.

- Ægialitidæ*; validity and position of the family, structure of prosternum, WICKHAM, pp. 356, 357, cuts, Canad. Ent. xxxvi.
- Ægialites*; early stages, taxonomy, WICKHAM, pp. 57-60, pl. ii, t. c.
- Pyrochroa innoraticeps*, Amurland, PIC, p. 26, Échange 1904, **n. sp.**
- Rhinosimus æneus numidica* subsp. *n.*, PIC, p. 10, t. c.
- Salpingus distincticollis*, *bisbimaculatus*, Madagascar, PIC, p. 72, Bull. Soc. ent. France 1904, **n. spp.**
- Salpingus oneili*, Cape Colony, PIC, p. 35, Échange 1904, **n. sp.**
- Chrysanthia distinctithorax*, Taurus, PIC, p. 57, t. c. **n. sp.**
- Danerces bicolor*, Queensland, LEA, p. 100, pl. iv, fig. 11, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Œdemera hispanica*, Grenada, PIC, p. 91, Échange xx, **n. sp.**
- Sora* Walker (1859) is prior to *Sora* Hein., PROUT, p. 115, Entomologist 1904.

CURCULIONIDÆ.

- [Cf. ABEILLE (5), BEDEL (97), BEGUIN-BILLECOCQ (98), BROUN (184), CASEY (248), CHAMPION (614), CHITTENDEN (263, 264), CSIKI (329), DANIEL & DANIEL (349), DESBROCHERS (361-365, 367), ENDERLEIN (460), FAIRMAIRE (473), FAUST (481), FORMÁNEK (533, 534), FROGGATT (561), GIRAULT (610), HARTMANN (663), HELLER (674, 675), LEA (862, 864), MARSHALL (915), MCCLENAHAN (930), PETRI (1035-1037), PIC (1060, 1065, 1071, 1076, 1077, 1079), REITER (1148, 1150, 1152), SCHAEFFER (1220), SCHULTZE (1252), SOLARI (1326), WAGNER (1462).]

Development of rostrum, *Balaninus* and *Mononychus*, MCCLENAHAN (930).
VITALE continues his account of protective resemblance in *Curculionidæ*, Riv. ital. Sci. Nat. xxiv, pp. 141-145.

- Acalles italicus*, Campobasso, p. 529, *lusitanicus*, Portugal, p. 530, SOLARI, Ann. Mus. Genova xli, **n. spp.**
- Acalyptops* **n. g.** *Anthonomorum*, p. 400, *A. ornatus* **n. sp.**, Usambara, p. 401, HARTMANN, Deutsche ent. Zeitschr. 1904.

- Acherres globicollis*, W. Australia, LEA, p. 114, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Adosomus n. g.* pp. 188, 236, for *sumsonovi* Gebl. etc., FAUST, Deutsche ent. Zeitschr. 1904.
- Ædriodes humeralis*, W. Australia, LEA, p. 113, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Alcides interruptus bilineellus* subsp. n., HELLER, p. 186, Ent. Tidskr. xxv.
- A. albopictus*, Madagascar, FAIRMAIRE, p. 247, Ann. Soc. ent. Belgique xlviii, **n. sp.**
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- Anasticomerus subg. n.*, cf. *Ischnotrachelus*.
- Anthonomus grandis*, natural history, SANDERSON, Texas Agric. exp. Stat. Circ. 3; *A. grandis*, in Cuba, food-plant, SCHWARZ, pp. 13–17, P. ent. Soc. Washington vi.
- A. brevispinus*, Araxes Valley, p. 139, *laticor*, Siberia, p. 140, PIC, Bull. Soc. Autun xv, **n. spp.**
- Aphanomastix n. g. Spheophoridarum*, p. 196, *A. cryptophodus n. sp.*, Cameroons, p. 197, HELLER, Ent. Tidskr. xxv.
- Aphyomerus n. g. Menemachinorum*, *A. obliquus n. sp.*, E. Africa, HARTMANN, p. 409, Deutsche ent. Zeitschr. 1901.
- Apion*; food plants of 12 species, WAGNER, pp. 378, 379, Munchen. Kol. Zeitschr. ii; *A. hydropicum*, identification, DANIEL, pp. 182–184, Munchen. Kol. Zeitschr. ii; *A. subcariceps*, characters, p. 108, *subconiceps* var. n. *tenuirostre*, p. 109, DESBROCHERS, Frelon xii.
- A. (Ceratapion) austriacum*, Mödling, p. 374, *woerzi*, p. 377, *moczarskii*, p. 378, Corfu, WAGNER, Munchen. Kol. Zeitschr. ii; *A. gavoyi*, France, p. 53, *vincenti*, Cairo, *semicyanescens*, Turkestan, p. 54, *foveatum*, Caucasus, *approximatum*, Morocco, p. 55, *rectinasus*, S. France, p. 56, *italicum*, Piedmont, *subconiceps*, Carcassonne, p. 57, DESBROCHERS, Frelon xii; *A. subplumbeum*, Arabia, DESBROCHERS, p. 108, t. c.; *A. tropicum*, p. 392, *kwaïense*, p. 393, *sulcatipenne*, p. 394, *vetulum*, *amabile*, p. 395, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904; *A. (Aspidapion) alluaudi*, *bouvieri*, p. 54, *malgasicum*, p. 55, *bicarinatum*, *denudatum*, p. 56, *madagascariense*, *inornatum*, p. 57, Madagascar, *pamanzianum*, Mayotte, p. 56, *A. insulam*, *albosquamosum*, p. 103, Madagascar, BEGUIN-BILLECOCQ, Bull. Soc. ent. France 1904 : **n. spp.**
- Aporotopus n. g.* p. 190, for *Pachycerus cribrosus* Fairm., FAUST, Deutsche ent. Zeitschr. 1904.
- Apsophus n. g. Menemachinorum*, p. 407, *fasciatus*, p. 408, **n. sp.**, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Asinocleonus subg. n.* of *Pachycerus*, FAUST, p. 224, Deutsche ent. Zeitschr. 1904.
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- Atactogaster n. g.* p. 230, with *insularis*, Zanzibar, *suspectus*, *finitimus*, Madras, p. 251, **n. spp.**, FAUST, Deutsche ent. Zeitschr. 1904.
- Attelabus bipustulatus*, habits, GIRAULT, pp. 189–193, Ent. News Philad. xv.
- Beosomus n. g.* near *Bantiades*, p. 118, for *B. tacitus n. sp.*, New Zealand, p. 119, BROWN, Ann. Nat. Hist. xiv.
- Bagous longirostris*, Sicily, VITALE, Riv. Col. ital. i [not seen by Recorder]; *B. latepunctatus*, p. 50, *bagdatensis*, p. 51, Bagdad, PIC, Echange xx; *B. striatulus*, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *B. fastosus*, E. Africa, HARTMANN, p. 391, Deutsche ent. Zeitschr. 1904 : **n. spp.**

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- Blosyrus haroldi*, Usambara, HARTMANN, p. 369, Deutsche ent. Zeitschr. 1904, **n. sp.**
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- Bryochaeta subcruciata* = (*palliat* Pasc.), *sulcipennis* Th. = (*sufflata* Pasc.), *nigrita* Chev. = (*viridis* Pasc.), HELLER, pp. 181, 182, Ent. Tidskr. xxv.
- B. sellata*, *apicalis*, p. 183, *sjostedti*, p. 184, Cameroons, id. t. c. **n. spp.**
- Cænopsis maroccana*, Tangier, SOLARI, p. 525, Ann. Mus. Genova xli, **n. sp.**
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- Catoptes vexator*, p. 108, *egens*, p. 109, *duplex*, p. 110, New Zealand, BROUN, Ann. Nat. Hist. xiv, **n. spp.**
- Cecyropa alternata*, p. 105, *discors*, p. 106, New Zealand, BROUN, t. c. **n. spp.**
- Centrinus lineellus*, Guatemalan not N. American, CASEY, p. 324, Canad. Ent. xxxvi.
- Centorrhynchus albolimbatus*, Tunis, *laborensis*, Algeria, PIC, p. 93, Echange xx, **n. spp.**
- Chærocephalus hyperoides*, p. 99, *siculus*, p. 100, Sicily, RAGUSA, Natural. Sicil. xvii ; *C. grandis*, Algeria, PIC, p. 92, Echange xx : **n. spp.**
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- Chalcodermus dentiferus*, pl. xvii, fig. 2, p. 317, *angulicollis*, fig. 4, p. 319, *calidus*, fig. 5, p. 320, *longirostris*, fig. 11, *serripes*, fig. 12, p. 325, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4 ; *C. æneus*, natural history, CHITTENDEN, pp. 39–43, Bull. U. S. Dep. Agric. Ent. xlv.
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- Cleogonus armatus*, Mexico-Colombia, p. 315, pl. xvii, fig. 1, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4, **n. sp.**
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- Clypeorhynchus inophlaoides*, New Zealand, BROWN, p. 117, Ann. Nat. Hist. xiv, **n. sp.**
- Cnemodontus ambitiosus*, *natalensis*, S. Africa, FAUST, p. 199, Deutsche ent. Zeitschr. 1904, **n. spp.**
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- Cænopsimorphus tenietensis*, Tunis, *desbrochersi*, Algeria, PIC, p. 91, Echange xx, **n. spp.**
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- C. quadridens*, pl. xviii, fig. 1, p. 343, *inequidens*, fig. 2, *tridens*, fig. 3, p. 344, *serratidens*, fig. 4, *truncatidens*, fig. 5, p. 345, *tetrastigma*, figg. 6, 7, p. 346, *rectirostris*, fig. 8, *fulvescens*, fig. 9, p. 347, *latidens*, fig. 10, *varicolor*, fig. 11, p. 348, *oculatus*, fig. 12, *triannulatus*, p. 349, *squamulatus*, fig. 13, *armatus*, p. 350, *lævirostris*, fig. 14, *flavosus*, fig. 15, p. 351, *fulvomaculatus*, fig. 16, *robustus*, p. 352, *longipennis*, fig. 17, *rugulosus*, fig. 18, p. 353, *rugiventris*, fig. 19, *longirostris*, fig. 20, p. 354, *latefasciatus*, *squamosus*, fig. 21, p. 355, *glabriventris*, *anthonomoides*, fig. 22, p. 356, *subulatus*, fig. 23, *brevicollis*, fig. 24, p. 357, *alboplagiatus*, fig. 25, p. 358, *albosignatus*, fig. 26, *curvidens*, fig. 27, p. 359, *quadripustulatus*, fig. 29, p. 360, *cribratus*, p. 361, *impressicollis*, *brevirostris*, pl. xix, fig. 1, p. 362, *flavibasis*, fig. 2, p. 363, *foveicollis*, fig. 3, *griseus*, p. 364, *unidentatus*, *fasciculatus*, p. 365, *picticollis*, fig. 4, *lineatipes*, p. 366, *multiguttatus*, *curtirostris*, p. 367, *rufitarsis*, *sinuaticollis*, fig. 5, p. 368, *germanus*, *nigricans*, p. 369, *fulvopictus*, *flavangulus*, p. 370, *annulipes*, *duplicatus*, p. 372, *bispinis*, fig. 6, *mixtus*, fig. 7, p. 373, *continuus*, *bilineatus*, fig. 8, p. 374, *divirgatus*, fig. 10, p. 375, *venustus*, fig. 12, p. 376, *albolineatus*, fig. 13, *eburneus*, fig. 14, p. 377, *albinus*, fig. 15,

- p. 378, *sellatus*, *curvilineatus*, fig. 16, p. 379, *minutus*, *dimidiatus*, p. 380, *deplanatus*, fig. 17, *præstans*, fig. 18, p. 381, *trilineatus*, fig. 19, p. 382, *nodulosus*, *discifer*, fig. 20, p. 383, *corallinus*, fig. 21, p. 384, *striatirostris*, *crenatus*, p. 385, *quadrinodosus*, fig. 22, *gibbipennis*, fig. 23, p. 386, *hybophorus*, fig. 24, *cærulescens*, fig. 25, p. 387, *spinifer*, fig. 27, p. 388, *reticulatus*, fig. 28, p. 389, *piliventris*, fig. 29, *granulicollis*, fig. 30, p. 390, *unifasciatus*, pl. xx, fig. 1, *albofasciatus*, fig. 2, p. 391, *vittaticollis*, fig. 3, *megalops*, fig. 4, p. 392, *constrictus*, *sextuberculatus*, p. 393, *umbrosus*, p. 394, *canaliculatus*, *opacus*, pl. xx, fig. 6, p. 395, *arachnoides*, fig. 7, *albifrons*, fig. 8, p. 396, *cordatus*, fig. 9, p. 397, *gibbistrostris*, fig. 10, *excavatus*, p. 398, *sulcicollis*, *cavicrus*, fig. 11, p. 399, *fulvibasis*, *rufescens*, p. 400, *nemorivagus*, *divisus*, fig. 12, p. 401, *obliquelineatus*, fig. 13, *brevisetis*, fig. 14, p. 402, *squamifrons*, fig. 15, p. 403, *suturalis*, fig. 16, *albopictus*, fig. 17, p. 404, *scoparius*, fig. 18, *lobatus*, fig. 19, p. 405, *compressus*, fig. 20, *rubidus*, fig. 21, p. 406, *isthmicus*, p. 407, *fulvolineatus*, *silvicola*, p. 408, *uncifer*, fig. 22, *lineatus*, p. 409, *parvulus*, *adustus*, fig. 23, p. 410, *candidus*, fig. 24, *furinosus*, p. 411, *parvicollis*, *crucifer*, fig. 25, p. 412, *cinerascens*, fig. 26, p. 413, *semirufus*, fig. 28, p. 414, *dilatirostris*, fig. 29, *sinuatocostatus*, p. 415, *segregatus*, *latirostris*, fig. 31, p. 416, *nodifer*, pl. xxi, fig. 1, p. 417, *elongatus*, fig. 2, p. 418, *hystricosus*, fig. 3, *bicarinatus*, fig. 4, p. 419, *insularis*, fig. 6, *tuberculatus*, fig. 7, p. 421, *quadrilineatus*, fig. 8, p. 422, *mexicanus*, fig. 9, *ramifer*, p. 423, *punctiventris*, *uniformis*, fig. 10, p. 424, *nodifrons*, p. 425, *ovalis*, *alternans*, p. 426, *validus*, fig. 12, *lateralis*, fig. 13, p. 427, *longidens*, fig. 14, p. 428, *dentimanus*, fig. 15, *tenuipes*, p. 429, *aristatus*, fig. 17, p. 430, *curtus*, *paleatus*, p. 431, *guatemalensis*, *conicicollis*, fig. 18, p. 432, *incanus*, fig. 20, *sulcipectus*, *spinipennis*, fig. 21, p. 434, *glabricollis*, *ciliatus*, fig. 23, p. 436, *sublineatus*, *tubogensis*, p. 437, *cucullatus*, *insignis*, *angusticollis*, p. 438, *curvimanus*, fig. 24, p. 439, *rufifrons*, *planifrons*, p. 440, Central America, CHAMPION, t. c.; *C. rubescens*, Texas, SCHAEFFER, p. 232, J. N. York Ent. Soc. xii : **n. spp.**
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- Echinocnemus gracilirostris*, Madagascar, FAIRMAIRE, p. 241, t. c. **n. sp.**
- Ectemnorhinus richtersi*, p. 673, *crozetensis*, p. 674, Crozet islds., ENDERLEIN, Zool. Anz. xxvii, **n. spp.**
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- Euthyphasis sordidata*, N. S. W., *lineata*, W. Australia, LEA, p. 82, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
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- Evadodes rugiceps*, N. S. Wales, LEA, p. 79, t. c. **n. sp.**
- Evas elliptica*, p. 77, *latipennis*, p. 78, W. Australia, LEA, t. c. **n. spp.**
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- cinereus*, fig. 9, p. 111, *propinquus*, pl. iv, fig. 5, p. 123, *cervinus*, fig. 7, p. 125, *sjustedti*, p. 131, *oneili*, p. 134, Africa, MARSHALL, t. c. **n. spp.**
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SCOLYTIDÆ.

[Cf. BLANDFORD (614), BROUN (184), HAGEDORN (647-651), HOPKINS (704), KNOCKE (823), LEA (864), POWELL (1104).]

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Brachyspartus ebeninus, pl. viii, f. 11, *barbatus*, Panama, BLANDFORD, p. 265, Biol. Centr.-Amer. Col. iv, pt. 6, **n. spp.**

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Corthylus, the genus with table of species, BLANDFORD, pp. 251-254, Biol. Centr.-Amer. Col. iv, pt. 6.

C. flagellifer, pl. viii, f. 2, p. 255, *luridus*, p. 256, *ptyocerus*, f. 5, p. 257, *comatus*, p. 258, *panamensis*, p. 259, *rubricollis*, p. 260, *collaris*, *parvulus*, p. 261, Central America, *fuscus*, Brazil, *discoideus*, Venezuela, p. 262, id. t. c. **n. spp.**

Cryphalus granulatus, p. 229, var. *n. tredlii*, p. 232, *C. asperatus* Gyll. = (*binodulus* Ratz.) p. 230, HAGEDORN, Munchen. Kol. Zeitschr. ii.

C. grothii, Centr. Eur., id. t. c., p. 232 and 372, cut, **n. sp.**

Dendroctonus valens, note on habits, POWELL, p. 239, J. N. York Ent. Soc. xii.

Dendroterus n. g. near *Dryocates*, *D. mexicanus*, pl. vii, f. 25, *salliei n. spp.* Mexico, BLANDFORD, p. 233, Biol. Centr.-Amer. Col. iv, pt. 6.

Glochincerus n. g. *Corthyli*, *G. retusipennis*, pl. ix, figg. 1, 2, p. 266, *gemellus*, p. 267, **n. spp.**, Guatemala, BLANDFORD, t. c.

Gnathotrichus consentaneus, pl. vii, f. 26, p. 247, *bituberculatus*, p. 248, Guatemala, BLANDFORD, t. c. **n. spp.**

Hylesinus fici, Sydney, LEA, p. 103, P. Linn. Soc. N. S. Wales xxix, **n. sp.**

Hylocurus spinifex, Mexico, pl. vii, f. 23, p. 225, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6, **n. sp.**

Hypothenemus eruditus, synonymy and habitat, BLANDFORD, pp. 229, 230, t. c.

H. validus, Mexico, p. 228, *lævigatus*, Nicaragua, p. 229, id. t. c. **n. spp.**

Ips curvidens and allies, distinctions, BARGMANN, pp. 262-264, Allg. Zeitschr. Ent. ix.

Mesoscolytus n. g. p. 125, for *M. inurbanus n. sp.*, New Zealand, p. 126, BROUN, Ann. Nat. Hist. xiv.

Metacorthylus n. g. *M. nigripennis n. sp.*, Panama, pl. viii, f. 10, p. 263, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6.

Phlæobius vittatus, ♂, UYTENBOOGAART, p. 143, Ent. Ber. Nederland. i.

Pityophthorus nigricans, p. 236, *amœnus*, *confusus*, p. 237, *poricollis*, *cacuminatus*, p. 238, *guatemalensis*, p. 239, *diglyphus*, *obtusipennis*, p. 240, *timidus*, *confinis*, p. 241, *cinnamatus*, *obsoletus*, p. 242, *P. ? incompositus*, p. 243, *carinifrons*, *politus*, p. 244, *deyrollei*, *incommodus*, p. 245, Central America, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6, **n. spp.**

Platypus australis, sexes, LEA, p. 105, P. Linn. Soc. N. S. Wales xxix.

P. omnivorus, Tasmania, id., p. 104, t. c. **n. sp.**

Pterocyclon, characters and synonymy, BLANDFORD, pp. 288-270, Biol. Centr.-Amer. Col. iv, pt. 6.

P. melanura, pl. viii, f. 13, p. 272, *præruptum*, *tomicoides*, f. 15, p. 273,

- hoegei*, p. 274, *umbrinum*, *consimile*, p. 275, *difficile*, *luctuosum*, p. 276, *bidens*, p. 277, *glabrifrons*, *punctifrons*, p. 278, *cordatum*, p. 279, *terminatum*, *egenum*, p. 280, Centr. America, BLANDFORD, t. c. **n. spp.**
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BRENTHIDÆ.

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ANTHRIBIDÆ.

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- Acorynus tonkinianus*, *mosonicus*, Tonkin, JORDAN, p. 232, Nov. Zool. xi, **n. spp.**
- Allandrus indistinctus*, Bolivia, JORDAN, p. 242, t. c. **n. sp.**
- Anthrenosoma* **n. g.** p. 281, *A. tibialis*, *bohlsi*, *gounellei*, p. 282, **n. spp.**, S. America, JORDAN, t. c.
- Anthribus wallacei philippinensis*, *malaicus* subsp. n., JORDAN, p. 235, t. c.
- A. planatus*, Gold Coast, JORDAN, p. 239, t. c.; *A. macrocerus*, Sikkim, *frontalis*, Sumatra, JORDAN, p. 235, t. c.; *A. farinatus*, *gounellei*, p. 296, *lævipennis*, *picticollis*, p. 297, *frenatus*, *analisis*, p. 298, *lineiger*, *collaris*, *inequalis*, p. 299, *plagiatus*, p. 300, S. America, JORDAN, t. c.; *A. bipunctatus*, p. 235, *penicellatus*, p. 236, Texas, SCHAEFFER, J. N. York Ent. Soc. xii : **n. spp.**
- Apatenia poecila*, p. 85, *gularis*, p. 86, New Guinea, JORDAN, Ann. Mus. Genova xli, **n. spp.**
- Apolecta tonkiniana*, Manson Mts., p. 236, *diversa*, Borneo, p. 237, JORDAN, Nov. Zool. xi, **n. spp.**
- Asemorhinus sportella*, Sumatra, Borneo, JORDAN, p. 234, t. c. **n. spp.**
- Barra* **n. g.** p. 274, *B. gounellei* **n. sp.**, Bahia, p. 275, JORDAN, t. c.
- Blaberops* **n. g.** near *Blaberus*, p. 238, *B. macrocerus* **n. sp.**, Usambara, p. 239, JORDAN, t. c.
- Caccorhinus obscurus*, Celebes, JORDAN, p. 236, t. c. **n. sp.**
- Callanthribus* **n. g.** near *Sintor*, p. 82, *C. xanthomelas* **n. sp.**, New Guinea, p. 83, JORDAN, Ann. Mus. Genova xli.
- Corrhecerus melaleucus*, *aqualis*, S. America, JORDAN, p. 271, Nov. Zool. xi, **n. spp.**

- Dasyrhopala* **n. g.** near *Discotenes*, *D. tarsalis* **n. sp.**, Brazil, JORDAN, p. 272, t. c.
- Dendrotrogus colligans papuanus* subsp. n., JORDAN, p. 84, Ann. Mus. Genova xli.
- Discotenes consors*, Peru, JORDAN, p. 272, Nov. Zool. xi, **n. sp.**
- Domoptolis* **n. g.** for *Gymnognathus menetriesi* Boh., JORDAN, p. 252, t. c.
- Doticus convexus*, Celebes, p. 90, *planatus*, New Guinea, p. 91, JORDAN, Ann. Mus. Genova xli, **n. spp.**
- Epitaphius lunatus*, E. Africa, JORDAN, p. 240, Nov. Zool. xi, **n. sp.**
- Erotylopsis* **n. g.** near *Euparius*, p. 308, *E. pujoli* **n. sp.**, Brazil, p. 309, JORDAN, t. c.
- Eucorynus unicolor*, Ternate, JORDAN, p. 85, Ann. Mus. Genova xli, **n. sp.**
- Eucyclotropis* **n. g.** near *Discotenes*, *E. pustulata*, *striata*, Brazil, p. 273, *pylades*, Mexico, p. 274, **n. spp.**, JORDAN, Nov. Zool. xi.
- Eugigas harmandi*, pl. viii, figg. 15, 16, p. 129, LESNE, Mission Pavie iii.
- Eugonodes* **n. g.** near *Eugonus*, *E. marmoreus*, *brevirostris* **n. spp.**, Brazil, JORDAN, Nov. Zool. xi.
- Eugonops* **n. g.** *E. germaini*, Bolivia, *clericus*, Bahia, p. 285, **n. spp.**, JORDAN, t. c.
- Eugonus simplex*, *tenuis*, p. 300, *robustus*, *ornatus*, *particolor*, p. 301, S. America, JORDAN, t. c. **n. spp.**
- Euparius polius*, *obesus*, *calcaratus*, p. 303, *molitor*, *similis*, p. 304, *consors*, *nodosus*, *rufus*, p. 305, *nigritarsis*, p. 306, *albiceps*, *parculus*, *hypsideres*, p. 307, *quagga*, *suturalis*, p. 308, S. America, JORDAN, t. c. **n. spp.**
- Euphlaeobius* **n. g.** near *Phlaeobius*, *E. asellus* **n. sp.**, E. Africa, JORDAN, p. 239, t. c.
- Eusintor* **n. g.** near *Sintor*, p. 80, *E. lorice* **n. sp.**, New Guinea, p. 81, JORDAN, Ann. Mus. Genova xli.
- Eusphyrus scutellaris*, p. 290, *hamatus*, *lateralis*, *nubilis*, p. 291, S. America, JORDAN, Nov. Zool. xi, **n. spp.**
- Exechontis* **n. g.** near *Gibber*, p. 283, *E. sparsa* **n. sp.**, Brazil, p. 284, JORDAN, t. c.
- Goniocleus* **n. g.** p. 260, *G. baccatus*, *melas*, p. 261, *minor*, *hirsutus*, *apicalis*, p. 262, S. America, *tarsalis*, Costa Rica, p. 263, *capucinus*, Peru, *umbrinus*, Mexico, p. 264, **n. spp.**, JORDAN, t. c.
- Gymnognathus ophiopsis* Dalm. = (*decorus* Perr.), JORDAN, p. 242, t. c.
- G. extensus*, p. 242, *marianna*, *ada*, *blanca*, p. 243, *hilda*, *emma*, p. 244, *clara*, *bella*, p. 245, *coronatus*, *nubilus*, p. 246, *alma*, *irma*, p. 247, *clelia*, *erna*, *nanus*, p. 248, *soror*, Brazil, *helena*, Colombia, p. 249, *editha*, *martha*, p. 250, *hamatus*, *leucomelas*, p. 251, *comptus*, Brazil, *scolytinus*, Peru, JORDAN, t. c. **n. spp.**
- Habrissus tonkinianus*, Tonkin, JORDAN, p. 234, t. c. **n. sp.**
- Homocleus* **n. g.** *H. concolor*, p. 264, *femoralis*, Nicaragua, *vestitus*, p. 265, *dorsalis*, p. 266, S. America, **n. spp.**, JORDAN, t. c.
- Hypseus axillaris major*, p. 87, *H. frenatus morio*, p. 88, subspp. n., JORDAN, Ann. Mus. Genova xli.
- Hypseus vestitus*, Celebes, JORDAN, p. 87, t. c. **n. sp.**
- Lagopezus lugubris*, Rio de Janeiro, JORDAN, p. 275, Nov. Zool. xi, **n. sp.**
- Litocerus histrio fluviatilis* subsp. n., JORDAN, p. 85, Ann. Mus. Genova xli.
- L. sticticus*, Tonkin, JORDAN, p. 233, Nov. Zool. xi, **n. sp.**
- Mecocerus hauseri*, W. Africa, JORDAN, p. 238, t. c.; *M. callosus*, Tonkin, JORDAN, p. 231, Nov. Zool. xi : **n. spp.**
- Mecotropis cylindricus*, Tonkin, JORDAN, p. 230, t. c. **n. sp.**
- Misthosima crucifera*, New Guinea, JORDAN, p. 90, Ann. Mus. Genova xli, **n. sp.**
- Monocleus* **n. g.** *M. elaphrinus*, *spiniger*, p. 255, *annulipes*, *basalis*, p. 256, *rhombifer*, or, p. 257, *sordidus*, S. America, *idacus*, Mexico, p. 258,

- costatus*, Bolivia, *centralis*, Para, p. 259, *niger*, Costa Rica, p. 260, JORDAN, Nov. Zool. xi, **n. spp.**
- Nemotrichus*, tabulated, p. 270, *N. jekeli*, *andicola* and *uniformis*, subsp. n., p. 269, JORDAN, t. c.
- N. vitticollis*, Cayenne, *armatus*, Costa Rica, p. 267, *niger*, *pæcilus*, p. 268, *fuscus*, *obtusus*, p. 269, S. America, JORDAN, t. c. **n. spp.**
- Nessiara armata*, p. 233, *mosonica*, p. 234, Tonkin, JORDAN, t. c. **n. spp.**
- Ormiscus*, and allies, synonymy, classification, JORDAN, p. 286, t. c.
- O. cupreus*, p. 286, *ornatus*, *ancora*, *costifer*, p. 287, *sparsilis*, *vulgaris*, p. 288, *discifer*, *spilotus*, *lineatus*, *costifrons*, p. 289, *brevis*, *angulatus*, p. 290, S. America, JORDAN, t. c. **n. spp.**
- Orthotropis* **n. g.** near *Gymnognathus*, *O. quadrata* **n. sp.**, Brazil, JORDAN, p. 254, t. c.
- Paranthribus* **n. g.** *P. rufescens* **n. sp.**, Bahia, JORDAN, p. 283, t. c.
- Parexillis* **n. g.** *P. lineatus*, p. 284, *variegatus*, p. 285, **n. spp.**, Brazil, JORDAN, t. c.
- Phænithon tibialis*, *longitarsis*, p. 292, *longicornis*, *lævipennis*, p. 293, S. America, *nigritarsis*, Centr. America, *similis*, p. 294, *pictus*, *ruficollis*, p. 295, S. America, JORDAN, t. c.
- Phæochrotus phorceas*, Burma, JORDAN, p. 80, Ann. Mus. Genova xli, **n. sp.**
- Phanosolena* **n. g.** *Tropiderini*, p. 234, *P. nigrotuberculata* **n. sp.**, Texas, p. 235, SCHAEFFER, J. N. York. Ent. Soc. xii.
- Phlæobius lineifer*, p. 240, *striga*, *pachymerus*, p. 241, E. Africa, JORDAN, Nov. Zool. xi; *P. papuanus*, New Guinea, JORDAN, p. 89, Ann. Mus. Genova xl : **n. spp.**
- Physopterus oculatus*, Tonkin, JORDAN, p. 231, Nov. Zool. xi, **n. sp.**
- Piezocorynus brevis*, *plagifer*, *compar*, p. 277, *verrucatus*, *suturalis*, p. 278, *dorsalis*, *homæus*, *alternans*, p. 279, *basalis*, p. 280, S. America, JORDAN, t. c. **n. spp.**
- Piezonemus* **n. g.** near *Piezocorynus*, p. 275, *durus*, *lateralis*, p. 276, **n. spp.**, Brazil, JORDAN, t. c.
- Rawasia gestroi*, Celebes, p. 83, *convexa*, Java, p. 84, JORDAN, Ann. Mus. Genova xli, **n. spp.**
- Scymnopsis* **n. g.** *S. suturalis* **n. sp.**, Bolivia, JORDAN, Nov. Zool. xi.
- Strabops* **n. g.** near *Gymnognathus*, *S. insignis* **n. sp.**, Amazons, JORDAN, p. 253, t. c.
- Sympaector fruhstorferi*, Tonkin, JORDAN, p. 233, t. c. **n. sp.**
- Toxotropis irroratus*, p. 233, *submetallicus*, p. 234, Texas, SCHAEFFER, J. N. York Ent. Soc. xii, **n. spp.**
- Trachytropis* **n. g.** *T. asper* **n. sp.**, Mexico, JORDAN, p. 266, Nov. Zool. xi.
- Uncifer* **n. g.** near *Gibber*, *U. sticticus* **n. sp.**, Burma, JORDAN, p. 88, Ann. Mus. Genova xli.
- Urodon baudii* = (*granulatus* Schilsky), PIC, p. 218, Bull. Soc. ent. France 1904.
- U. anatolicus*, *rosinæ*, Anatolia, PIC, p. 40, Echange 1904; *U. ciliatus*, Bucharra, *granulatus*, Algeria, *korbi*, Anatolia, SCHILSKY, p. 78, Wien. ent. Zeit. xxiii, **n. spp.**
- Xenocerus lautus*, Tonkin, JORDAN, p. 230, Nov. Zool. xi; *X. suturalis*, Ron isld., JORDAN, p. 89, Ann. Mus. Genova xli, **n. spp.**

CERAMBYCIDÆ.

[Cf. AURIVILLIUS (57, 58), BAECKMANN (74), BROUN (184), CHITTENDEN & WEBSTER (1498), CSIKI (330), DANIEL (345, 347), DAVIS (353), DISTANT (382), FAIRMAIRE (473, 474), FELT & JOUTEL (495b), HAUSER (665), HELLER (673), JORDAN (770), LAMEERE (854, 855), NICOLAS (981), PIC (1063, 1072, 1073), SCHAEFFER (1220).]

- LAMEERE continues his revision of *Prionides*, Ann. Soc. ent. Belgique 1904, 9th part, *Callipogonines*; 10th memoir, *Titanines*, t. c. pp. 310–352.
- A monograph of the S. African *Cerambycidae*, in which all the species are figured has been published by DISTANT (382). The new species and genera are described by GAHAN, who also remarks, in various places, on the classification of *Cerambycidae*, and the wing-nervures of *Prionides* and allies. No attempt has been made by the Recorder to deal with the synonymy of this memoir.
- CSIKI continues his papers on the *Cerambycidae* of Hungary, Rov. Lapok xi, pp. 35 etc.
- In Echange xx PIC advertises Part v of his Matériaux pour servir à l'étude des *Longicornes*. I have not seen this work and do not know whether it is a genuine publication. This was denied in the case of previous parts.
- Agaleptus* **n. g.** for *Olosteromerus quadrinotatus* Pér., GAHAN, p. 122, Distant, Ins. Transvaal i.
- Aliturus fuscus*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Anauxesis simplex*, Brit. E. Africa, JORDAN, p. 365, Nov. Zool. xi, **n. sp.**
- Anisogaster brunneus*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Anoplistes jacobsoni*, Syr-Darja, BAECKMANN, p. 312, Rev. Russe Ent. 1904, **n. sp.**
- Artelida caligata*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Ataxia spinicauda*, Florida, SCHAEFFER, p. 224, J. N. York Ent. Soc. xii, **n. sp.**
- Bisaltus bimaculatus*, Bolivia, AURIVILLIUS, p. 207, Ent. Tidskr. xxv, **n. sp.**
- Cædomæa blucheani*, *nebulosa*, p. 259, *griseotincta*, p. 260, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Calanthemis hauseri*, Brit. E. Africa, JORDAN, p. 364, Nov. Zool. xi, **n. sp.**
- Callergates* **subg. n.** of *Ergates* for *E. gaillardoti*, of which *akbesianus* PIC is synonym, LAMEERE, p. 47, Ann. Soc. ent. Belgique xlviii.
- Callipogon (Eoxenus)*, natural history and systematic notes, SEMENOV, pp. 220–224, Rev. Russe Ent. iv.
- C. beckeri*, Mexico, p. 56, *C. (Orthomegas) pehlkei*, Peru, p. 60, *C. (Orthomegas) proletarius*, Porto Rico, p. 66, LAMEERE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Callomegas* **subg. n.** of *Callipogon*, p. 64, for *C. sericeus* Ol., and *C.*, sp. n., LAMEERE, t. c.
- Caloclytus krantzi*, Transvaal, GAHAN, pl. xi, fig. 19, p. 123, Distant, Ins. Transvaal. i, **n. sp.**
- Cartallum ebulinum*, natural history, XAMBEU, pp. 45–58, Soc. Pyrenees-or. xlv.
- Ceroplesis millingeni*, Arabia, PIC, Mat. Long. 4 [not seen by Recorder] ? **n. sp.**
- Olosteromerus regalis*, Transvaal, DISTANT, pl. xi, fig. 7, p. 121, Ins. Transvaal. i, **n. sp.**
- Clytus rhamni* var. *n. longicollis*, REITTER, p. 82, Wien. ent. Zeit. xxiii.
- C. fulvohirsutus*, *raddensis*, Siberia, PIC, p. 18, Echange 1904; *C. gulekanus*, Taurus, PIC, p. 65, t. c. : **n. spp.**
- Cochliopselaphus catherina* var. *n. maricovensensis*, DISTANT, p. 141, Ins. Transvaal. i.
- Coptoea* **n. g.** near *Temnopsis*, p. 313, *C. oculata*, *triguttata* **n. spp.**, Africa, p. 314, AURIVILLIUS, Arkiv Zool. i.
- Coptops virisparsa*, Tonkin, FAIRMAIRE, p. 145, Mission Pavie iii, **n. sp.**
- Cordylomera elegans*, Transvaal, DISTANT, pl. x, fig. 6, p. 115, Ins. Transvaal. i, **n. sp.**

- Crossotus bimaculatus*, E. Africa, AURIVILLIUS, p. 323, Arkiv Zool. i; *C. penicillatus*, Transvaal, GAHAN, p. 146, pl. xiv, fig. 10, Distant, Ins. Transvaal. i; *C. hovanus*, Madagascar, FAIRMAIRE, p. 257, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Ctenoscelis, atra*, larva, HELLER, p. 388, Stettin Ent. Zeit. lxx.
- Cymatura spumans*=(*maskuna* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Cyrtocris n. g. Theocrides*, p. 321, *C. fulvicornis n. sp.*, E. Africa, p. 322, AURIVILLIUS, Arkiv Zool. i.
- Dere nigrita*, Transvaal, GAHAN, pl. xi, fig. 22, p. 124, Distant, Ins. Transvaal. i, **n. sp.**
- Derolus brunneipennis*, Transvaal, GAHAN, pl. x, fig. 5, p. 113, t. c. **n. sp.**
- Desmiphora grisea*, Bolivia, AURIVILLIUS, p. 208, Ent. Tidskr. xxv, **n. sp.**
- Diadelia atomosparsa*, Madagascar, FAIRMAIRE, p. 260, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Diaxenes dendrobii* in N. America, SCHWARZ, p. 21, P. ent. Soc. Washington vi.
- Dityloderus ? balteatus*, E. Africa, AURIVILLIUS, p. 316, Arkiv Zool. i, **n. sp.**
- Dorcadion*; PIC, in Mat. Long. 4, ii, 4, [not seen by Recorder] discusses some synonymies and varr. and describes some new species; *D. neilense* Esc. and allies, characters and variation, NICOLAS, pp. 35-40, Bol. Sol. Aragon. Ci. nat. iii; *D.* varr. from Spain, NICOLAS, pp. 82, 83, Echange xx; *D. cervæ*, a good species, CSIKI, pp. 189, 199, Rov. Lapok xi.
- D. granulorum*, Spain, PIC, p. 17, Echange 1904; *D. elvire*, Spain, PIC, p. 58, t. c. : **n. spp.**
- Drymochaeres truquii*, habits, GUERRY, pp. 157-159, Bull. Soc. ent. France 1904.
- Dysphaga tenuipes*, metamorphosis and parasites, GIRAULT, pp. 299, 300, Ent. News Philad. xv.
- Elaphidion* and *Psyrassa*, characters and components, SCHAEFFER, p. 61, J. N. York Ent. Soc. xii.
- E. subdepressum*, Lower California, SCHAEFFER, p. 222, t. c. **n. sp.**
- Enaretta exigua*, Transvaal, GAHAN, p. 152, pl. xv, fig. 7, Distant, Ins. Transvaal. i, **n. sp.**
- Erlandia n. g.* near *Dynamostes*, p. 205, *E. inopinata n. sp.*, Bolivia, p. 206, AURIVILLIUS, Ent. Tidskr. xxv.
- Eugoides n. g.* near *Eugoa*, p. 314, *E. cæruleipennis n. sp.*, E. Africa, p. 315, AURIVILLIUS, Arkiv Zool. i.
- Eunidia plagiata*, pl. xiv, fig. 24, p. 149, *aspersa*, fig. 25, *spilota*, fig. 21, *modesta*, fig. 22, p. 150, *euzonata*, fig. 19, *fasciata*, fig. 20, p. 151, Transvaal, GAHAN, Distant Ins. Transvaal. i, **n. spp.**
- Exocentrus lateralis*, pl. xv, fig. 11, p. 155, *echinulus*, fig. 12, *exiguus*, fig. 14, *inermis*, fig. 13, p. 156, Transvaal, GAHAN, t. c. **n. spp.**
- Frea reticulata*, S. Africa, DISTANT, p. 144, pl. xiv, fig. 4, Ins. Transvaal. i, **n. sp.**
- Glenea pygidialis*, E. Africa, *sangirica*, Sanghir, p. 324, *palavensis*, p. 325, *bivittata*, Palawan, *didyma*, Java, p. 326, *glaucescens*, Celebes, *ruficauda*, Sumbava, *bisbivittata*, Java, p. 327, *nigriceps*, Malacca, p. 328, AURIVILLIUS, Arkiv Zool. i, **n. spp.**
- Hecyrida plagicollis*, Transvaal, GAHAN, p. 147, pl. xv, fig. 5, Distant, Ins. Transvaal. i, **n. sp.**
- Hercodera pulchella*, Transvaal, GAHAN, pl. x, fig. 24, p. 115, t. c. **n. sp.**
- Hesperophanes griseus*, longevity, larval habits, KÜNCKEL, p. 68, Bull. Soc. ent. France 1904.
- Hoplorama perrieri*, Madagascar, FAIRMAIRE, p. 258, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Hypocrites aureovittatus*, E. Africa, AURIVILLIUS, p. 316, Arkiv Zool. i, **n. sp.**

- Icariotis alboscultata*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Idactus fasciculosus*, E. Africa, AURIVILLIUS, p. 318, Arkiv Zool. i, **n. sp.**
- Lentalius n. g.* near *Lasiocercis*, p. 256, *L. obliquepictus n. sp.*, Madagascar, p. 257, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii.
- Leptura verticalis* and allies to *n. subg. Sphenalia*, p. 355, synonymy and varr., K. DANIEL, pp. 355–371, Munchen. Kol. Zeitschr. ii; *L. distigma* var. *n. lopezbayoi*, LAUFFER, p. 374, Bol. Soc. espan. iv; *L. rubra*, hermaphrodite, BICKHARDT, p. 303, Deutsche ent. Zeitschr. 1904.
- L. (Sphenalia) ariadne*, Crete, p. 355, *erinnys*, Asia Minor, p. 356, K. DANIEL, Munchen. Kol. Zeitschr. ii, **n. spp.**
- Lygrus testaceus*, Transvaal, GAHAN, p. 109, pl. x, fig. 9, Distant, Ins. Transvaal. i, **n. sp.**
- Lyranela n. g.* near *Lygrus*, p. 109, *L. sulcipennis n. sp.*, Transvaal, pl. x, fig. 22, p. 110, GAHAN, t. c.
- Mallodon spinibarbis*, larva, HELLER, p. 391, Stettin Ent. Zeit. lxxv.
- Mallosia*; revision with varr. *n.* and subg. *n.* (cf. *Semnosia*), K. DANIEL, pp. 301–314, Munchen. Kol. Zeitschr. ii.
- Marocaulus granicollis*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Mimococtopus bipenicillatus*, Madagascar, FAIRMAIRE, p. 256, t. c. **n. sp.**
- Myrsinus n. g.* *Aphanasiides*, *M. modestus n. sp.*, Transvaal, pl. x, fig. 21, p. 116, GAHAN, Distant, Ins. Transvaal. i.
- Nemophas helleri*, Key islds., HAUSER, p. 42, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Neoclytus jouteli*, New Jersey, DAVIS, p. 34, pl. vi, Ent. News Philad. xv; *N. magnus*, Lower California, SCHAEFFER, p. 224, J. N. York Ent. Soc. xii : **n. sp.**
- Neopolyarthron* is subg. of *Prionus*; *P. angustatus* Jak. = (*ahngeri* Brancs.), SEMENOW, p. 39, Rev. Russe Ent. iv.
- Nicarete albolineatus*, p. 257, *vitticollis, submaculosus*, p. 258, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Niphoparmena n. g.* near *Mycerinodes*, p. 317, *N. bispinosa n. sp.*, E. Africa, p. 318, AURIVILLIUS, Arkiv Zool. i.
- Oberea rosine*, Amurland, PIC, p. 17, Echange 1904 : *O. ulmicola*, Illinois, CHITTENDEN, p. 4, habits and metamorphosis, WEBSTER, pp. 5–13, pls. i, ii, Bull. Illinois Lab. vii : **n. spp.**
- Obrium obscuripenne*, Amurland, PIC, p. 17, Echange 1904 : *O. brunneum*, Lower California, SCHAEFFER, p. 223, J. N. York Ent. Soc. xii : **n. spp.**
- Æmida n. g.* for *Paræme gahani* Dist., GAHAN, p. 106, Distant, Ins. Transvaal. i.
- Æmodana n. g.* *Æ. quadrinotata n. sp.*, Lydenburg, GAHAN, p. 107, pl. xiii, fig. 5, t. c.
- Olenecamptus nubilus*, Brit. E. Africa, JORDAN, p. 365, Nov. Zool. xi; *O. olenus*, Transvaal, GAHAN, p. 143, pl. xiv, fig. 1, Distant, Ins. Transvaal. i : **n. spp.**
- Omphalocera* merged in *Nicarete*, FAIRMAIRE, p. 258, Ann. Soc. ent. Belgique xlviii.
- Oncideres stillata*, Bolivia, AURIVILLIUS, p. 208, Ent. Tidskr. xxv, **n. sp.**
- Oncideres dejeani*, larva, HELLER, p. 395, Stettin Ent. Zeit. lxxv.
- Pachydissus pauper*, Transvaal, GAHAN, pl. x, fig. 8, p. 113, Distant, Ins. Transvaal. i, **n. sp.**
- Parandra glabra*, larva, HELLER, p. 383, Stettin Ent. Zeit. lxxv.
- Parmena balteus*, variation, MÜLLER, p. 176, Wien. ent. Zeit. xxiii.
- Pentanodes n. g.* near *Tetranodes*, *P. dietzii n. sp.*, Texas, SCHAEFFER, p. 222, J. N. York Ent. Soc. xii.
- Peritragus n. g.* near *Tragiscoschema*, p. 320, *P. nigroapicalis n. sp.*, E. Africa, p. 321, AURIVILLIUS, Arkiv Zool. i.

- Phantasia mystica*, Transvaal, DISTANT, p. 127, pl. xi, fig. 13, Ins. Transvaal. i, **n. sp.**
- Philematium hottentotum* = (*capense* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Phytoecia infernalis*, Amurland, PIC, p. 17, Echange 1904, **n. sp.**
- Pogonochærus taygetus*, Greece, PIC, Mat. Long. iv [not seen by Recorder], **? n. sp.**
- Polyzoa lucordairei*, larva, HELLER, p. 392, Stettin Ent. Zeit. lxx.
- Praonetha fuscopunctata*, p. 260, *hispina*, p. 261, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Prosopocera ertli*, E. Africa, AURIVILLIUS, p. 319, Arkiv Zool. i, **n. sp.**
- Protocallidium* subg. n. for *Callidium angustum*, CSIKI, p. 99, Rov. Lapok xi.
- Psathyrus suturalis*, Transvaal, GAHAN, p. 107, pl. xiii, fig. 1, Distant, Ins. Transvaal. i, **n. sp.**
- Purpuricenens miniatus*, Tonkin, FAIRMAIRE, p. 145, Mission Pavie iii, **n. sp.**
- Saperda*; monograph of N. American, with illustr. of larval work and of the insects, *S. populnea tuluri* subsp. n. p. 70, pl. vii, fig. 6, FELT & JOUTEL, Bull. N. York Mus. lxxiv.
- S. imitans*, Montreal and Massachusetts; FELT & JOUTEL, p. 58, pl. iii, fig. 4, t. c. **n. sp.**
- Semnosia* subg. n. of *Mallosia* for *M. scoritzi*, K. DANIEL, p. 301, Munchen. Kol. Zeitschr. ii.
- Somatidia testudo*, New Zealand, BROUN, p. 127, Ann. Nat. Hist. xiv, **n. sp.**
- Sophonica fulvicollis*, Transvaal, GAHAN, p. 154, pl. xv, fig. 15, Distant, Ins. Transvaal. i, **n. sp.**
- Sphenalia* subg. n., cf. *Leptura*.
- Stenocorus heterocerus* var. n. *homocerus*, DANIEL, p. 206, Munchen. Kol. Zeitschr. ii.
- Sternotomis carbonaria*, Africa, AURIVILLIUS, p. 320, Arkiv Zool. i: *S. euechroma*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Tapinolachnus aurivillianus*, Transvaal, DISTANT, pl. ix, fig. 15, p. 112, Ins. Transvaal. i, **n. sp.**
- Timoreticus imbellis*, Transvaal, GAHAN, pl. xii, fig. i, p. 132, t. c. **n. sp.**
- Toxentes pascoei*, Queensland, p. 21, LAMEERE, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tragocephala gemina*, Transvaal, DISTANT, pl. xii, fig. 13, p. 136, Ins. Transvaal. i, **n. sp.**
- Xixuthrus lineicollis*, larva, and pupa, HELLER, p. 401, Stettin Ent. Zeit. lxx.
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- Z. lævicolle*, Brit. E. Africa, JORDAN, p. 364, Nov. Zool. xi, **n. sp.**

BRUCHIDÆ.

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- B. soarezius*, Madagascar, PIC, p. 35, Echange 1904; *B. arizonensis*, p. 229, *gibbithorax*, p. 230, Arizona, *texanus*, Brownsville, p. 231, SCHAEFFER, J. N. York Ent. Soc. xii: **n. spp.**
- Caryoborus pallidus*, food, BARGAGLI, p. 3, Bull. Soc. ent. Ital. xxxvi.
- Laria stylophora*, Constantinople, K. DANIEL, p. 87, Munchen. Kol.

Zeitschr. ii; *L. mellyi*, Egypt, *monstrosicornis*, Anatolia, PIC, p. 40, Echange 1904; *L. tonkinica*, Tonkin, PIC, p. 42, Echange xx: **n. spp.**
Spermophagus eustrophoides, Florida, SCHAEFFER, p. 228, J. N. York Ent. Soc. xii, **n. sp.**

CHRYSOMELIDÆ [except *Hispides* and *Cassidides*].

[Cf. ABELLE (5), DANIEL (343, 349), FAIRMAIRE (473), JACOBY (742-749), JACOBY & CLAVAREAU (750), LEA (863, 864), PIC (1064, 1072, 1077), REITTER (1147), SCHAEFFER (1220), SEMENOW (1281), WEISE (1502, 1503, 1505).]

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Ænidea hauseri = (*Platyvantha clavareau* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.

Æ. nasuta, p. 401, *latifrons*, p. 402, *nilgiriensis*, p. 403, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Agasicles **n. g.** *Halticinae*, p. 400, *A. vittata* **n. sp.**, Peru, p. 401, JACOBY, P. Z. S. 1904, ii.

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Aphthona nigroscutellata, Galicia, REITTER, p. 82, Wien. ent. Zeit. xxiii; *A. bicolorata*, New Guinea, JACOBY, p. 487, Ann. Mus. Genova xli: **n. sp.**

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Brachycylus posticalis, p. 446, *mamillatus*, *aterrimus*, p. 447, Australia, LEA, Tr. ent. Soc. London 1904, **n. spp.**

Bradamina **n. g.** *Monoleptides*, *B. plicicollis* **n. sp.**, Madagascar, FAIRMAIRE, p. 268, Ann. Soc. ent. Belgique xlviii.

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Buphonella murina Gerst. (as *Apophyllia*) = (*elongata* Jac.), WEISE, p. 166, t. c.

Cadmus *T-niger*, p. 449, *calomeloides*, p. 450, *quadrifasciatus*, p. 451, *fasciaticollis*, p. 452, *apicirufus*, p. 453, *perlatus*, *nothus*, p. 454, Australia or Tasmania, LEA, Tr. ent. Soc. London 1904, **n. spp.**

- Calomela dilaticornis*, New Guinea, JACOBY, p. 480, Ann. Mus. Genova xli, **n. sp.**
- Candezea lorice*, p. 508, *sulcatipennis*, p. 509, New Guinea, JACOBY, t. c. **n. spp.**
- Casmene* **n. g.** *Heteraspine*, *C. natalense* **n. sp.**, Natal, JACOBY, p. 266, P. Z. S. 1904, i.
- Cerophysa andrewesi*, p. 396, *mundarensis*, p. 397, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Chaetocnema belli*, India, JACOBY, p. 392, t. c.; *C. lorice*, p. 489, *transversicollis*, p. 490, New Guinea, JACOBY, Ann. Mus. Genova xli : **n. spp.**
- Chalcolampra rufinoda*, Tasmania, LEA, p. 106, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Cheiridella* **n. g.** *Eumolpide*, p. 265, *C. zambesiana* **n. sp.**, Natal, p. 266, JACOBY, P. Z. S. 1904, i.
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- Chrysochloa tristis*, *rugulosa*, *collucens*, *fenestrellana*, relations, WEISE & DANIEL, pp. 234–237, Munchen. Kol. Zeitschr. ii.
- Cleoporus variegatus*, p. 387, *maculicollis*, p. 388, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Cleorina semipurpurea*, p. 473, *viridissima*, p. 474, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**
- Cænobius melanocephalus*, Mashonaland, JACOBY, p. 248, P. Z. S. 1904, i, **n. sp.**
- Colasposoma cyaneocupreum* (= *junodi* Pér.), JACOBY, p. 262, t. c.
- C. sheppardi*, p. 258, *pusillum*, p. 259, *piceitarse*, p. 260, *balyi*, *beiraense*, pl. xvii, fig. 10, p. 261, *mirabile*, p. 262, Africa, JACOBY, t. c. **n. spp.**
- Coptocephala rubicunda* var. *n. fuentei*, FIGUEROA, p. 374, Bol. Soc. espan. iv.
- Corynodes plagiat*, Nyassa, WEISE, p. 162, Arch. Naturg. lxx, i, **n. sp.**
- C. clypeatus*, India, JACOBY, p. 389, Ann. Soc. ent. Belgique xlviii, **n. sp.**
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- C. sabauda*, Savoy, PIC, p. 57, Echange xx; *C. brevicollis*, Italy, p. 249, *nobilis*, Alps, p. 281, J. DANIEL, Munchen. Kol. Zeitschr. ii; *C. longicornis*, Peru, JACOBY, p. 412, P. Z. S. 1904, ii : **n. spp.**
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- anthrax*, *laesicollis*, p. 266, *diversipes*, *cyaneocostatus*, *nedator*, p. 267, *eucharis*, p. 268, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii : *C. subcostatus*, India, JACOBY, p. 382, Ann. Soc. ent. Belgique xlviii ; *C. confinis*, *mediocris*, p. 392, *appendiculatus*, p. 393, *vicarius*, p. 394, *blandus*, p. 395, *quadratipennis*, p. 396, *compositus*, p. 397, *aurifer*, *purpureotinctus*, p. 398, *clarus*, p. 399, *melanopus*, p. 400, *variipennis*, p. 401, *clypealis*, p. 402, *rubicundus*, *rutilans*, p. 403, *larinus*, p. 404, *cariniventris*, p. 405, *stenocerus*, p. 406, *sobrinus*, p. 407, *pallens*, p. 408, *liliputanus* (Tasmania), p. 409, *tenebricosus*, *distortus*, p. 410, *rufoterminalis*, p. 412, *conspiciendus*, p. 413, *metallicus*, *basizonus*, p. 414, *comptus*, p. 415, *minusculus*, p. 416, *T-viridis*, p. 417, *serenus*, p. 418, *scabiosus*, p. 419, *incoctus*, p. 420, *comosus*, *convexicollis*, p. 421, *ornatipennis*, p. 422, *caelestis*, p. 423, *costipennis*, p. 424, Australia, LEA, Tr. ent. Soc. London 1904 ; *C. arizonensis*, Pinal Mts., p. 225, *brunneovittatus*, p. 226, Texas, SCHAEFFER, J. N. York Ent. Soc. xii : **n. spp.**
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- Damia tibialis*, E. Africa, WEISE, p. 158, Arch. Naturg. lxx, i ; *D. strigatipes*, p. 239, *trifasciata*, pl. xvii, fig. 9, p. 240, Africa, JACOBY, P. Z. S. 1904, i : **n. spp.**
- Demotina andrewesi*, p. 383, *fulvohirsuta*, p. 384, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Desmogramma nigripes*, S. America, JACOBY, p. 517, Arkiv Zool. i, **n. sp.**
- Diabrotica nordenskioldi*, Argentina, JACOBY, p. 521, t. c. **n. sp.**
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- Diandichus foveiventris*, W. Australia, LEA, p. 425, Tr. ent. Soc. London 1904, **n. sp.**
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- Disonycha amazonica*, Amazons, p. 401, *peruana*, *albicincta*, p. 402, Peru, JACOBY, P. Z. S. 1904, ii, **n. spp.**
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- Echtrusia cupensis*, Cape Colony, JACOBY, p. 264, P. Z. S. 1904, i, **n. sp.**
- Epitrix aeneicollis*, Argentina, JACOBY, p. 519, Arkiv Zool. i, **n. sp.**
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- Euryope barkeri*, Natal, JACOBY, p. 258, t. c. **n. sp.**
- Exosoma flavomarginatum* Jac. = (*Hallirhotius marginatus* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.
- Fidia clematis*, Texas, SCHAEFFER, p. 227, J. N. York Ent. Soc. xii, **n. sp.**
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- G. sexcostata*, Kashmir, JACOBY, p. 405, Ann. Soc. ent. Belgique xlviii, **n. sp.**
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- G. interrupta*, Mendoza, JACOBY, p. 523, Arkiv Zool. i, **n. sp.**
- Gronovius* **n. g.** *G. imperialis*, p. 499, *andaiensis*, p. 500, **n. spp.**, New Guinea, JACOBY, Ann. Mus. Genova xli.
- Gynandrophthalma ochropus* Har. = (*Ætheomorpha cærulea* Jac.), WEISE, p. 159, Arch. Naturg. lxx, i.

- G. salisburyensis*, p. 240, *varicolor*, p. 241, *hirtifrons*, p. 242, S. Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Haltica bicolora*, New Guinea, JACOBY, p. 482, Ann. Mus. Genova xli ; *H. boliviana*, S. America, JACOBY, p. 517, Arkiv Zool. i : **n. spp.**
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- Horatopyga reinecki*, Natal, WEISE, p. 163, Arch. Naturg. lxx, i, **n. sp.**
- Hyperaxis variegata*, India, JACOBY, p. 385, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Isnus suturalis*, Natal, JACOBY, p. 248, P. Z. S. 1904, i, **n. sp.**
- Itylus* **n. g.** for *Yulenia bicolor*, JACOBY, p. 497, Ann. Mus. Genova xli.
- Jacobyia viridis*, Niger, WEISE, p. 167, Arch. Naturg. lxx, i, **n. sp.**
- Khasia andrevesi*, India, JACOBY, p. 398, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Labidostomis (Chlorostola) nevadensis*, Spain, J. DANIEL, p. 91, Munchen. Kol. Zeitschr. ii ; *L. testaceipes*, p. 93, *delagrangei*, p. 94, Syria, PIC, Echange xx : **n. spp.**
- Lactica nicotinae*, Mexico, p. 396, *decorata*, p. 397, *maculicollis*, *posticata*, p. 398, *discicollis*, *rufobrunnea*, *baeri*, p. 399, *argentinensis*, Tucuman, p. 400, JACOBY, P. Z. S. 1904, ii, **n. spp.**
- Lefevrea fulvicollis*, Natal, JACOBY, p. 263, P. Z. S. 1904, i, **n. sp.**
- Lema weisei*, p. 230, *malvernensis*, *gerstaeckeri*, p. 231, *graminis*, *nigro-frontalis*, p. 232, *aethiopica*, p. 233, pl. xvii, fig. 1, *humeronotata*, fig. 2, p. 234, *hirtipennis*, p. 235, Africa, JACOBY, t. c. ; *L. crispatifrons*, Madagascar, FAIRMAIRE p. 262, Ann. Soc. ent. Belgique xlviii ; *L. paradoxa*, Pondicherry, JACOBY, p. 380, Ann. Soc. ent. Belgique xlviii : **n. spp.**
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- Lochmæa tropica* redescribed, JACOBY, p. 522, Arkiv Zool. i.
- Longitarsus kanaraensis*, p. 389, *fulvobrunneus*, p. 390, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Loxopleurus lateriflavus*, p. 430, *pallidipes*, *lugubris*, p. 431, *mixtus*, p. 433, *acentetus*, p. 434, *castor*, *pollux*, p. 435, *mitificus*, *dolens*, p. 436, *microscopicus*, p. 437, *marginipennis*, p. 438, *castigatus*, p. 439, *inconstans*, p. 440, *virgatus*, *fuscitarsis*, p. 441, *contiguus*, p. 442, *absonus*, p. 443, *immaturus*, 444, *disconiger*, p. 445, Australia or Tasmania, LEA, Tr. ent. Soc. London 1904, **n. spp.**
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- Macrolopha* ; constituents, JACOBY, p. 235, t. c.
- Malacodora* **n. n.** for *Malacosoma* Chevr., BEDEL, p. 236, Abeille xxx.
- Malegia caffer*, Caffraria, PIC, p. 20, Echange 1904 ; *M. pallidipes*, Madagascar, p. 35, *donckieri*, Arabia, p. 36, PIC, t. c. : **n. spp.**
- Mastostethus nigrovarians*, *funereus*, p. 63, *femoratus*, *erichsoni*, p. 64, *lacordairei*, *argentinensis*, p. 65, *nigricollis*, *balyi*, p. 66, *bolivianus*, *quadriplagiatus*, p. 67, S. America, JACOBY, Entomologist 1904, **n. spp.**
- Megalognatha usambarica*, *simplex*, p. 168, *apicalis*, p. 169, Africa, WIESE, Arch. Naturg. lxx, i, **n. spp.**
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- Menius brevicornis*, pl. xvii, fig. 11, Beira, JACOBY, p. 251, *P. Z. S.* 1904, i, **n. sp.**
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- Miopristis braunsi*, p. 235, *oneili*, pl. xvii, fig. 8, *zambesiana*, p. 236, *brevitarsis*, p. 237, Africa, JACOBY, *P. Z. S.* 1904, i, **n. spp.**
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- Morokasia* **n. g.** *M. nigromaculata* **n. sp.**, New Guinea, JACOBY, p. 498, *Ann. Mus. Genova* xli.
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- Oxygona amazonica*, Amazons, *capitata*, Peru, JACOBY, p. 411, *P. Z. S.* 1904, ii, **n. spp.**
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HISPIDÆ and CASSIDIDÆ.

[Cf. FAIRMAIRE (473), GESTRO (595, 596), LESNE (878), MUIR & SHARP (969), SHARP (1285), SPAETH (1327), WEISE (1503, 1504, 1507).]

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- Charidotis divisa*, Peru, p. 176, *drakei*, Paraguay, *redimita*, Bolivia, WEISE, p. 177, t. c. **n. spp.**
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- Ctenochira aberrata*, Costa Rica, WEISE, p. 176, t. c. **n. sp.**
- Cyanaspis* **n. g.** near *Himatidium*, p. 433, *C. testaceicornis* **n. sp.**, Bolivia, p. 434, WEISE, Deutsche ent. Zeitschr. 1904.
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- Odontionycha sublesta*, Usambara, WEISE, p. 173, t. c. **n. sp.**
- Oxycephala fasciata*, *dilutipes*, New Guinea, WEISE, p. 95, t. c. **n. spp.**
- Pistosia* **n. g.** p. 93, *P. maculata* **n. sp.**, Celebes, p. 95, WEISE, t. c.
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- Promecothea antiqua*, New Pomerania, WEISE, p. 97, t. c. **n. sp.**
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- L. apicalis*, Texas, SCHAEFFER, p. 198, t. c. n. sp.
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[Cf. PIC (1077), REITTER (1145, 1146, 1152), SEMENOW (1278).]

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- Mycetina inapicalis*, Syria, PIC, p. 90, Echange xx, n. sp.
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[Cf. SCHWARZ (1262), STEBBING (1336), WEISE (1506).]

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(B.) HYMENOPTERA.

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The hypopharynx of *Hymenoptera*, HILZHEIMER, Jena. Zeitschr. xxxix, pp. 119-150, pl. ii.

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ACULEATA.

APIDÆ.

[Cf. ADLERZ (15), ALFKEN (23, 24), ASHMEAD (44, 47, 48, 49), BENTON (101), BRÈTHES (179), CAMERON (230, 232, 233, 234), CAUDELL (252), COCKERELL (280-286, 289, 291-293), CRAWFORD (326, 327), DITTRICH (394), DREYLING (403, 404), DUCKE (415), FRIESE (541-552), FRIESE & WAGNER (553), GRAENICHER (619), GRÜNBERG (642), HOLMBERG (697), HOOPER (703), HÜPPNER (705), JACOBS (738), KOPP (840), MORICE (957, 959), NURSE (985), PIERCE (1086), ROBERTSON (1181, 1182), SAUNDERS (1214, 1215), SAUSSURE (1218), SCHROTTKY (1245), SCHULZ (1253, 1255), SEMICHON (1282, 1283), SWENK (1357, 1358), TITUS (1389, 1390), VACHAL (1424-1427), VIERECK (1448, 1450, 1451, 1454).]

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Ancyloscelis ecuadorius, Guyaquil, p. 22, *duckei*, p. 23, *gigas*, p. 24, Para, FRIESE, Zeitschr. Hym. Dipt. iv; *A. baeri*, p. 16, *flitarsis*, p. 17, *turmalis*, *girardi*, p. 18, *humulis*, *analis*, p. 19, S. America, VACHAL, Rev. Ent. franc. xxiii : n. spp.

- Andrena*, remarks on 10 spp. from Greece described by Brullé, ALFKEN, pp. 289–295, Zeitschr. Hym. Dipt. iv; *A. curvungula* and *pandellei*, ALFKEN, p. 320, Zeitschr. Hym. Dipt. iv; *A. parviceps* ♂, FREY-GESSNER, p. 57, Soc. ent. xix; *A. polemonii* to *Ptilandrena*, ROBERTSON, p. 278, Canad. Ent. xxvi.
- A. frey-gessneri*, Switzerland, ALFKEN, p. 81, Soc. ent. xix; *A. inoa*-Himalaya, CAMERON, p. 210, Entomologist 1904; *A. unita*, *balucha*, p. 558, *peskinica*, p. 559, *niveobarbata*, *cara*, p. 560, *hera*, *fluvofacies*, p. 561, *marmora*, p. 562, *dolorosa*, *collata*, p. 563, *legata*, *bimarginata*, p. 564, *flagella*, p. 565, *halictoides*, *satellita*, p. 566, India, NURSE, J. Bombay Soc. xv; *A. chlorogaster*, *piperi*, *chlorinella*, *angustitarsata*, *mustelicolor*, Oregon etc., VIERECK, p. 196, Canad. Ent. xxxvi; *A. trachandrenoides*, *pulverulenta*, *seminigra*, p. 221, *indotata*, *solidula*, *junonia*, *compactiscopea*, *neurona*, p. 222, *transnigra*, *seattlensis*, *chapmanæ*, *pullmani*, *longihirtiscopea*, *vicinoides*, p. 223, *saccata*, *hemileuca*, *clypeopararia*, *advarians*, *harveyi*, p. 224, *asmi*, *semipolita*, *xanthostigma*, *subcandida*, *deccussata*, *deccussatula*, p. 225, *subdistans*, *plana*, *scurra*, *nubilipennis*, *w-scripta*, p. 226, Oregon etc., VIERECK, Canad. Ent. xxxvi; *A. fragariana*, p. 64, *wheeleri*, p. 65, *persimilis*, p. 66, Wisconsin, GRAENICHER, Ent. News Philad. xv; *A. vierecki*, p. 26, *leptanthi*, p. 27, Colorado, COCKERELL, Ann. Nat. Hist. xiv: **n. spp.**
- Anthidium flavomarginatum* var. *n. ecuadorium*, FRIESE, p. 184, Zeitschr. Hym. Dipt. iv; *A. porterae* var. *n. amabile*, COCKERELL, p. 7, Entomologist 1904; *A. bicoloratum* var. *tucumanum*, VACHAL, p. 14, Rev. Ent. franc. xxiii; *A. paulinieri* ♂, *bicolor*, sexes, p. 101, *niveocinctum*, ♀, *cordatum* ♂, p. 105, FRIESE, Zeitschr. Hym. Dipt. iv; *A. sticticum* to *Dianthidium*, COCKERELL, p. 234, Entomologist 1904; *A. jugatorium* to *Dianthidium*, COCKERELL, p. 84, Ent. News Philad. xv.
- A. opacum*, *cucullatum*, p. 102, *zebra*, *braunsi*, p. 103, *abdominale*, *nigritarse*, p. 104, *nigripes*, *fulleborni*, p. 105, Africa, FRIESE, Zeitschr. Hym. Dipt. iv; *A. junodi*, Transvaal, FRIESE, p. 299, t. c.; *A. aricensis*, Chile, 22-punctatum, p. 182, *buchvaldi*, p. 183, *dentiventris*, p. 184, Ecuador, FRIESE, t. c.; *A. melanotrichum*, Chile, FRIESE, p. 303, t. c.; *A. caroli-ameghinai*, *Patagonia*, p. 351, with structure of nest, pp. 354–356, BRETHERS, An. Mus. Buenos Aires (3) ii: **n. spp.**
- Anthodioctes* **n. g.** *Dasygastrina*, *A. megachiloides*, p. 435, *psenythioides*, p. 436, **n. spp.**, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Anthoglossa cygni*, Swan River, COCKERELL, p. 203, Ann. Nat. Hist. xiv, **n. sp.**
- Anthophora chilensis* to *Ancyla*, ALFKEN, p. 141, and p. 180, Revist. Chilena viii.
- A. stanfordiana*, California, COCKERELL, p. 32, Ent. News Philad. xv; *A. paranensis*, p. 398, *saltensis*, p. 399, La Plata, HOLMBERG, An. Mus. Buenos Aires (3) ii; *A. hirpex*, S. America, VACHAL, p. 16, Rev. Ent. franc. xxiii: **n. spp.**
- Apis*, genus divided, cf. *Megapis*, *Micrapis*, species list, ASHMEAD, pp. 120–123, P. ent. Soc. Washington, vi; *A. mellifera* L. 1758 (= *mellifica* L. 1761), BENTON, P. ent. Soc. Washington vi; *A. mellifica*, nesting at large, BOUVIER, p. 187, Bull. Soc. ent. France 1904; *A. dorsata*, *indica* etc., nesting-habits, wax, HOOPER, Agric. Ledger 1904, No. 7.
- Apista* Sm., characters, COCKERELL, p. 330, Canad. Ent. xxxvi.
- Ashmeadiella schwarzi*, p. 98, *coquilletti*, *rufipes*, p. 99, *curriei*, *gillettei*, p. 100, N. America, TITUS, P. ent. Soc. Washington vi, **n. spp.**
- Augochlora pomona*, p. 456, *egeria*, *terpsichore*, p. 458, *euphrosyne*, p. 459, *polyhymnia*, p. 460, *diana*, p. 461, *epipyrgitis*, p. 462, *aglaia*, p. 463, S. America, HOLMBERG, An. Mus. Buenos Aires (3) ii, **n. spp.**
- Bombus* of Moravia, SLAVIČEK (in Moravian), Vestník. Klub. Prostejove iv, pp. 83–106; *B.*, habits of Arctic, FRIESE, Allg. Zeitschr. Ent. ix,

- pp. 409-414; *B. terrestris*, early excavation by ♀, L. SCHUSTER, p. 98, Zool. Garten xlv; *B.*, varieties, varr. n., FRIESE & WAGNER, Zool. Jahrb. Suppl. vii, pp. 551-570, pls. xxix, xxx; *B. robustus* varr. n., *B. thoracicus* var. n. *fuliginosus*, FRIESE, p. 188, Zeitschr. Hym. Dipt. iv.
- B. baeri*, *tucumanus*, Tucuman, VACHAL, p. 10, Rev. Ent. franc. xi, **n. spp.**
- Camptopœum rufiventre*, ♀ = (*schewyrewi* Mer.), NURSE, p. 575, J. Bombay Soc. xv.
- Caupolicana lugubris* = (*mystica* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *C. pubescens* = (*herbsti* Fr.), ALFKEN, p. 141, Revist. chilena viii; *C. mystica* var. *baeriana*, VACHAL, p. 23, Rev. Ent. franc. xxiii.
- C. herbsti*, Chile, FRIESE, p. 180, Zeitschr. Hym. Dipt. iv; *C. rufipes*, *albi-ventris*, p. 17, *nigri-ventris*, p. 18, Chile, FRIESE, t. c. : **n. spp.**
- Centris*, nesting habits, SCHROTTY, pp. 347, 348, Allg. Zeitschr. Ent.; *C. chilensis* = (*smithi* Friese), ALFKEN, p. 141, Revist. chilena viii; *C. dorsata* = (*ehrdardi* Schr. = *pocograndensis* Schr.), *C. obsoleta* = (*furcata* var. *friesei* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *C. furcata* and allies, table, DUCKE, pp. 209-210, Zeitschr. Hym. Dipt. iv; *C. bicolorella* n. n. for *smithii* Friese nec Cress., COCKERELL, p. 235, Entomologist 1904; *C. metatarsalis* ♀, p. 90, *cælebs* ♀, p. 92, FRIESE, Ann. Mus. Hungar. ii.
- C. autrani*, S. America, VACHAL, p. 16, Rev. Ent. franc. xxiii; *C. (Epi-charis) minima*, p. 90, Brazil, *labiata*, Costa Rica, *mixta*, Chile, p. 91, FRIESE, Ann. Mus. Hungar. ii; *C. superba*, p. 212, *singularis*, p. 213, Obidos, DUCKE, Zeitschr. Hym. Dipt. iv; *C. mixta*, Chile, FRIESE, p. 187, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Ceratina ino*, p. 575, *egeria*, *coriuna*, p. 576, Quetta, NURSE, J. Bombay Soc. xv; *C. philippinensis*, Manila, ASHMEAD, p. 2, J. N. York Ent. Soc. xii : **n. spp.**
- Chacoana* **n. g.** *Xylocoparia*, p. 432, *C. melanoxantha*, **n. sp.**, Argentina, p. 433, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Chalepogenus* **n. g.** p. 416, *C. incertus* **n. sp.**, Argentina, p. 417, HOLMBERG, t. c.
- Chalicodoma combusta* ♂ = (*Megachile cælocera*), COCKERELL, p. 205, Ann. Nat. Hist. xiv.
- Chelostoma neomexicanum*, New Mexico, COCKERELL, p. 13, Canad. Ent. xxxvi, **n. sp.**
- Chilicola?* *orientalis*, Tucuman, VACHAL, p. 24, Rev. Ent. franc. xxiii, **n. sp.**
- Cladocerapis* **n. g.** type *Lamprocolletes cladocerus* Sm., COCKERELL, p. 292, Ent. News Philad. xv.
- Cælioxyx* of Africa, characters, pp. 1-7, FRIESE, Arkiv Zool. ii, No. 6; *C. ribis* var. n. *kincaidi*, COCKERELL, p. 33, Ann. Nat. Hist. xiii.
- C. erytropus*, p. 7, *junodi*, p. 8, *difformis*, *caffra*, p. 9, *convergens*, *simplex*, p. 10, *cæruleipennis*, *luteipes*, *incarinata*, p. 11, *planidens*, *nasuta*, p. 12, *setosa*, *furcata*, p. 13, *glabra*, *auriceps*, p. 14, *africana*, *sexspinoso*, p. 15, Africa, FRIESE, Ark. Zool. ii, No. 6; *C. perseus*, India, NURSE, p. 577, J. Bombay Soc. xv; *C. cariniscutis*, *khassiana*, Khasia hills, CAMERON, p. 213, Ann. Nat. Hist. xiii; *C. manila*, Philippines, ASHMEAD, p. 281, Canad. Ent. xxxvi; *C. weinlandi*, New Guinea, SCHULZ, p. 235, Berlin. ent. Zeitschr. xlix; *C. strigata*, *miranda*, S. America, VACHAL, p. 15, Rev. Ent. franc. xxiii; *C. cerasiopleura*, p. 442, *lynchii*, p. 445, *lativalva*, p. 446, *C. ameghinoi*, p. 448, *tucumana*, p. 449, *mendozae*, *insolita*, p. 450, *chacoensis*, p. 451, *vituperabilis*, p. 453, *querens*, p. 454, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Colletes*, notes on some little-known, COCKERELL, p. 276, Ent. News Philad. xv; MORICE figures and describes the male genitalia of thirty-five species of *Colletes*, and tabulates the species, Tr. ent. Soc. London 1904,

- pp. 25–63, pls. vi–ix; *C. occidentalis* Hal. = *chilensis* Spin., *cyaniventris* Hal. = *cyaniventris* Spin., ALFKEN, p. 141, *Revist. chilena* viii.
- C. suecica*, Sweden, AURIVILLIUS, p. 214, *Ent. Tidskr.* xxiv (omitted last year); *C. moricei*, Tenerife, SAUNDERS, p. 229, *Ent. Mag.* xl; *C. eous*, Transcaucasus, p. 43, *cecrops*, Attica, p. 44, *perezi*, Cairo, p. 45, *eatonii*, Algeria, p. 49, *phalericus*, S. Europe, p. 53, *pumilus*, Algeria, p. 55, MORICE, *Tr. ent. Soc. London* 1904; *C. similis*, N. America, ROBERTSON, p. 276, *Canad. Ent.* xxxvi; *C. robustus*, Nebraska, SWENK, p. 251, *Ent. News Philad.* xv; *C. fulgidus*, Oregon etc., SWENK, p. 95, *Canad. Ent.* xxxvi; *C. wilmattæ*, New Mexico, COCKERELL, p. 14, *Canad. Ent.* xxxvi; *C. niger*, p. 76, *bruneri*, p. 77, Costa Rica, SWENK, *Canad. Ent.* xxxvi; *C. catulus*, *virgatus*, S. America, VACHAL, p. 26, *Rev. Ent. franc.* xxiii; *C. cyaneus*, Argentina, HOLMBERG, p. 468, *An. Mus. Buenos Aires* (3) ii : **n. spp.**
- Conohalictoides* **n. g.** *C. lovelli* **n. sp.**, Delaware, VIERECK, p. 245, *Ent. News Philad.* xv.
- Crocisa jaegerskoeldi*, Khartoum, MORICE, p. 9, *Jägerskiöld exp. No.* 14, **n. sp.** (but see *Zool. Rec.* 1903).
- Cryptohalictoides* **n. g.** *C. spiniferus* **n. sp.**, Nebraska, VIERECK, p. 261, *Ent. News Philad.* xv.
- Ctenoapis lutea*, sexes, NURSE, p. 570, *J. Bombay Soc.* xv.
- Ctenoplectra vagans*, Philippines, COCKERELL, p. 204, *Ann. Nat. Hist.* xiv, **n. sp.**
- Dialictus*, composition, COCKERELL, p. 235, *Entomologist* 1904.
- Dianthidium*, fresh components, COCKERELL, pp. 206, 207, *Ann. Nat. Hist.* xiv.
- Dioxys atlantica*, Tenerife, SAUNDERS, p. 232, *Ent. Mag.* xl, **n. sp.**
- Diphaglossa spinolæ*, Bolivia, CRAWFORD, p. 50, *Canad. Ent.* xxxvi; *D. ? gaullei*, Tucuman, VACHAL, p. 23, *Rev. Ent. franc.* xxiii : **n. spp.**
- Egapistus* **n. n.** for *Apista* Sm., COCKERELL, p. 357, *Canad. Ent.* xxxvi.
- Energoponus* **n. g.** *Anthophorita*, p. 406, *E. ameghoini*, p. 407, *strenuus*, p. 408, **n. spp.**, Argentina, HOLMBERG, *An. Mus. Buenos Aires* (3) ii.
- Epeolus remigatus martini* a distinct species, COCKERELL, p. 24, t. c.
- E. crucis*, p. 39, *beulahensis*, p. 40, New Mexico, *olympiellus*, Washington State, p. 41, COCKERELL, *Ann. Nat. Hist.* xiii; *E. ? baeri*, Tucuman, VACHAL, p. 23, *Rev. Ent. franc.* xxiii : **n. spp.**
- Epiclopus gayi* = (*Melecta chilensis*), COCKERELL, p. 207, *Ann. Nat. Hist.* xiv.
- Epimonispractor* **n. g.** p. 426, *E. gratiosus*, p. 427, *bomanii*, p. 428, **n. spp.** Argentina, HOLMBERG, *An. Mus. Buenos Aires* (3) ii.
- Epinomia triangulifera*, natural history, relations with other insects, PIERCE, pp. 181–189, *Stud. Univ. Nebraska* iv.
- Eriades clypeatus*, p. 297, *bicornutus*, *eximius*, p. 298, S. E. Africa, FRIESE, *Zeitschr. Hym. Dipt.* iv; *E. tenuis*, India, NURSE, p. 577, *J. Bombay Soc.* xv : **n. spp.**
- Euspis* and *Parevaspis*, *E. smithi* **n. n.** for *abdominalis* Sm., FRIESE, pp. 137, 138, *Allg. Zeitschr. Ent.* ix.
- Eucera flavitarsis* = (*Tetralonia placens* Schlett.), ALFKEN, p. 141, *Revist. chilena* viii.
- E. medusa*, p. 578, *diana*, *E. (Macrocera) phryne*, p. 579, *pomona*, p. 580, *cassandra*, p. 581, India, NURSE, *J. Bombay Soc.* xv, **n. spp.**
- Euglossa cordata* var. **n.** *townsendi*, COCKERELL, p. 24, *Ann. Nat. Hist.* xiv; *E. superba* Hoffm. (as *Plusia*) = (*smaragdina* Perty); FRIESE, p. 99, *Zeitschr. Hym. Dipt.* iv.
- Exomalopsis verbesinæ*, New Mexico, COCKERELL, p. 21, *Ann. Nat. Hist.* xiv, **n. sp.**
- Greeleyella* **n. g.** *Panurginæ*, p. 235, *G. beardsleyi* **n. sp.**, Colorado, p. 236, COCKERELL, *Entomologist* 1904.

Habropoda fulvipes, Khasia hills, CAMERON, p. 211, Ann. Nat. Hist. xiii, **n. sp.**

Halictus, synonymical notes on european, ALFKEN, p. 1, Zeitschr. Hym. Dipt. iv; *H. frey-gessneri* n. n. for *subfasciatus* Nyl., id. p. 3; *H. orpheus* n. n. for *testaceus* Nurse, NURSE, p. 26, J. Bombay Soc. xvi; *H.*, Australian and New Zealand species, COCKERELL, p. 211, Ann. Nat. Hist. xiv; *H. gayi*, *posticus* and *gayatinus* Spin. to *Ceratina*, ALFKEN, p. 141, Revist. chilena viii.

H., VACHAL (1426) describes by tables numerous species that are probably new, though this is not stated, many of the names occur twice, there are upwards of 100, all from South and Central America, ? **n. spp.**

H. dubitabilis, p. 613, *hollandi*, p. 614, *hammi*, p. 615, Majorca, SAUNDERS, Tr. ent. Soc. London 1904; *H. dubius*, Tenerife, SAUNDERS, p. 231, Ent. Mag. xl; *H. carinifrons*, N. India, CAMERON, p. 303, Ann. Nat. Hist. xiii; *H. himalayensis*, India, CAMERON, p. 210, Entomologist 1904; *H. philippinensis*, Manila, ASHMEAD, p. 128, P. U. S. Mus. xxviii; *H. manila*, Philippines, ASHMEAD, p. 281, Canad. Ent. xxxvi; *H. peraustralis*, S. Australia, COCKERELL, p. 211, Ann. Nat. Hist. xiv; *H. vierecki*, p. 97, *marinus*, p. 99, New Jersey, CRAWFORD, Ent. News Philad. xv; *H. denticulus*, *procerus*, p. 469, *nearcticus*, p. 470, N. America, *ochromerus*, Brazil, *citricornis*, Chili, *trichecus*, p. 471, *transvorsus*, *capitulatus*, p. 472, Mexico, *citerior*, hab. ?, *æquatus*, *linctus*, *crocoturus*, p. 473, *tricornis*, *jubatus*, *circinatus*, p. 474, *pharus*, *costalis*, *spinalis*, Mexico, *egregius*, Brit. Colombia, *colatus*, Colorado, p. 476, *pallicornis*, Mexico, *crassus*, *granosus*, p. 477, *occultus*, N. America, *respersus*, *laneus*, Mexico, p. 478, *adelipus*, *pullilabris*, p. 479, *arctous*, *nigridens*, *nigricollis*, p. 480, *gelidus*, *gularis*, N. America, *aratus*, Mexico, *diatretus*, Colorado, p. 481, *bivarus*, *curtulus*, p. 482, Mexico, *fartus*, Washington, *sertus*, p. 483, *coactilis*, *ectypus*, *biseptus*, p. 484, *terginus*, *sudus*, Mexico, *beskei*, *centranellus*, S. America, p. 485, *cubitalis*, Mexico, *lanifer*, hab. ?, *pisinnus*, Chili, p. 486, VACHAL, Bull. Soc. Correze xxvi; *H. clematisellus*, New Mexico, COCKERELL, p. 13, Canad. Ent. xxxvi; *H. riveti*, *antariis*, p. 313, *H. (Augochl.) notares*, p. 314, Ecuador, VACHAL, Bull. Mus. Paris 1904; *H. baeri*, *alticola*, Tucuman, VACHAL, p. 25, Rev. Ent. franc. xxiii : **n. spp.**

Heriadini to be used instead of *Trypetini*, TITUS, p. 23, J. N. York Ent. Soc. xii.

Heriades bruneri, Costa Rica, TITUS, p. 24, t. c. **n. sp.**

Heteranthidium **n. g.** type *Anthidium dorsale* Lep., COCKERELL, p. 292, Ent. News Philad. xv.

Hopliphora velutina=(*Oxyntedis beroni* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.

Hoplitis sambuci, Washington, TITUS, p. 101, P. ent. Soc. Washington vi, **n. sp.**

Hoplonomia **n. g.** *Andrenide*, *H. quadrifasciata* **n. sp.**, Philippines, ASHMEAD, p. 4, J. N. York Ent. Soc. xii.

Hypanthidium **n. g.** type *Anthidium flavomarginatum* Sm., COCKERELL, p. 292, Ent. News Philad. xv.

Lanthanomelissa **n. g.** p. 418, *L. discrepans* **n. sp.**, Argentina, p. 418, HOLMBERG, An. Mus. Buenos Aires (3) ii.

Leioproctus boltoni, p. 203, *confusus*, p. 204, New Zealand, COCKERELL, Ann. Nat. Hist. xiv, **n. spp.**

Leptergatis **n. g.** p. 422, *L. halictoides*, *mesopotamica*, p. 424, *romeroi*, p. 425, Argentina, **n. spp.**, HOLMBERG, An. Mus. Buenos Aires (3) ii.

Leptometria **n. g.** p. 409, *L. pereyre*, p. 410, *baraderensis*, p. 411, *andina*, p. 412, **n. spp.**, Argentina, HOLMBERG, t. c.

Macrocera baeri, p. 19, *linearis*, *brethesi*, *buccosa*, p. 20, *curtata*, *discobola*, p. 21, *arrhenica*, *dama*, p. 22, S. America, VACHAL, Rev. Ent. franc. xxiii, **n. spp.**

- Macrotera secunda*, Mexico, COCKERELL, p. 205, Ann. Nat. Hist. xiv, **n. sp.**
- Megachile latimanus grindeliarum* subsp. n., COCKERELL, p. 33, Ent. News Philad. xv; *M. lachesis* ♂, SCHULZ, p. 234, Berlin. ent. Zeitschr. xlix; *M. sauleyi* Guér. = *chilensis* Spin., ALFKEN, p. 141, Revist. chilena viii; *M. sparganotes* to *Lithurgus*, FRIESE, p. 99, Zeitschr. Hym. Dipt. iv; *M. dubia* Sich. to *Lithurgus*, FRIESE, p. 304, t. c.; *M.*, analysis of a nest, LUDWIG, p. 225, Allg. Zeitschr. Ent. ix.
- M. damaraensis*, p. 330, *atripes*, p. 331, *flavescens*, *malangensis*, p. 332, *marshalli*, *triangulifera*, p. 333, *quadrispinosa*, *M. (Chalicodoma) cariniventris*, p. 334, *fulvohirta*, *M. latitarsis*, p. 335, *cornigera*, *niveofasciata*, p. 336, Africa, FRIESE, Zeitschr. Hym. Dipt. iv; *M. volkmanni*, p. 299, *kerenensis*, *cyanescens*, p. 301, *junodi*, *impunctata*, p. 302, Africa, FRIESE, t. c.; *M. khasiana*, India, CAMERON, p. 216, Ann. Nat. Hist. xiii; *M. taprobanæ*, Ceylon, CAMERON, p. 15, Zeitschr. Hym. Dipt. iv; *M. aberrans*, Nicobars, Java etc., FRIESE, p. 329, Zeitschr. Hym. Dipt. iv; *M. robbii*, Manila, ASHMEAD, p. 128, P. U. S. Mus. xxviii; *M. strophostylis*, N. America, ROBERTSON, p. 277, Canad. Ent. xxxvi; *M. emoryi*, New Mexico, COCKERELL, p. 7, Entomologist 1904; *M. rufohirta*, Chile, p. 185, *garleppi*, p. 186, *ecuadoria*, p. 187, Ecuador, *aricensis*, Chile, p. 188, FRIESE, Zeitschr. Hym. Dipt. iv; *M. arctos*, Tucuman, *patagonica*, Santa Cruz, p. 11, *vetula*, *rufiplantis*, *baeri*, p. 12, *lævinasis*, *eburnipes*, *schrottkyi*, p. 13, *nubila*, p. 14, Tucuman, VACHAL, Rev. Ent. franc. xxiii : **n. spp.**
- Megacilissa tarsata* = (*metatarsalis* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *M. eximia* to *Ptiloglossa*, FRIESE, p. 19, t. c.
- M. matutina*, Paraguay, SCHROTTY, p. 346, Allg. Zeitschr. Ent. ix, **n. sp.**
- Megapis* **n. g.** for *Apis dorsata*, ASHMEAD, p. 120, P. ent. Soc. Washington vi.
- Melanapis rufifrons*, Quetta, NURSE, p. 567, J. Bombay Soc. xv, **n. sp.**
- Melecta interrupta* varr. *n. fallugia*, *rociadensis*, COCKERELL, p. 23, Ann. Nat. Hist. xiv; *M. armata*, habits relations with *Anthophora*, SEMICHON, Bull. Soc. ent. France 1905, p. 188.
- Melipona baeri*, Tucuman, VACHAL, p. 9, Rev. Ent. franc. xxiii, **n. sp.**
- Melissa diabolica* = (*Cyphomelissa pernigra* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Melissodes californica* to *Synhalonia*, COCKERELL, p. 235, Entomologist 1904.
- M. machaerantheræ*, New Mexico, COCKERELL, p. 21, Ann. Nat. Hist. xiv, **n. sp.**
- Melissoptila bonaërensis*, Buenos Ayres, HOLMBERG, p. 384, An. Mus. Buenos Aires (3) ii, **n. sp.**
- Micrapis* **n. g.** for *Apis florea*, ASHMEAD, p. 122, P. ent. Soc. Washington vi.
- Monumetha argentifrons*, ♂ characters, TITUS, p. 26, J. N. York Ent. Soc. xii.
- Morgania*; cf. *Pasites* and *Omachthes*.
- Nectarodieta* **n. g.** p. 420, *N. oliveiræ* **n. sp.**, Argentina, p. 421, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Neohalictoides* **n. g.** type *H. maurus* Cr., VIERECK, p. 261, Ent. News Philad. xv.
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- N. detecta*, p. 571, *annexa*, p. 572, India, NURSE, J. Bombay Soc. xv; *N. frieseana*, p. 28, *semiscita*, p. 29, Colorado, COCKERELL, Ann. Nat. Hist. xiv; *N. (Gnathias) rubrella*, p. 75, *N. (Micronomada) lamarensis*, p. 76, *ukleri*, p. 77, *N. (Xanthidium) rhodoxantha*, p. 78, *crawfordi*,

- collinsiana*, p. 79, *parvicincta*, p. 80, with var. *rufula*, *N. gillettei*, *agynia*, p. 81, *pallidella*, p. 82, *coloradella*, *luteopicta*, p. 83, *alpha*, p. 84, Colorado, COCKERELL, Bull. Colorado exp. Stat. 94 : n. spp.
- Nomia rubella* ♀, *scutellaris*, *maculata* and *nigripes*, subspp. n., FRIESE, p. 296, Zeitschr. Hym. Dipt. iv; *N. tegulata* ♂, MORICE, p. 6, Jägerskiöld exp. No. 14.
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- Osiris fasciata* = (*Euthyglossa fasciata* Rad.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
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- O. sponsa*, *balucha*, p. 573, *sita*, p. 574, Quetta, NURSE, J. Bombay Soc. xv, n. spp.
- Oxæa festiva*, ♂, FRIESE, p. 18, Zeitschr. Hym. Dipt. iv.
- Oxystoglossa decorata*, characters, COCKERELL, p. 208, Ann. Nat. Hist. xiv.
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- Paranomia stantoni*, Philippines, ASHMEAD, p. 4, J. N. York Ent. Soc. xii, n. sp.
- Parasphecodes*, table, COCKERELL, p. 209, Ann. Nat. Hist. xiv.
- P. melbournensis*, *frenchi*, Australia, COCKERELL, p. 210, t. c. n. spp.
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- Pasites dichrous* to *Morgania*, COCKERELL, p. 207, t. c.
- Perdita gerhardi*, p. 21, *monardæ*, p. 22, New Jersey, VIERECK, Ent. News Philad. xv, n. spp.
- Podalirius orotava*, Tenerife, SAUNDERS, p. 234, Ent. Mag. xl; *P. vedettus*, p. 582, *connexus*, p. 583, *sergius*, p. 584, India, NURSE, J. Bombay Soc. xv : n. spp.
- Prochelostoma philadelphii*, characters, TITUS, p. 24, J. N. York Ent. Soc. xii.
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- P. dubitata*, S. Europe, p. 323, *persica*, Araxes, p. 324, *friesei*, Fiume, p. 325, ALFKEN, Zeitschr. Hym. Dipt. iv; *P. basimacula*, Darjiling, CAMERON, p. 209, Entomologist 1904; *P. philippinensis*, Manila, ASHMEAD, p. 5, J. N. York Ent. Soc. xii; *P. sayi*, N. America, ROBERTSON, p. 273, Canad. Ent. xxxvi : n. spp.
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- Proteriades* n. g. for *Heriades semirubra* Ckll., TITUS, p. 25, J. N. York Ent. Soc. xii.
- Psænythia unizonata*, Argentina, HOLMBERG, p. 455, An. Mus. Buenos Aires (3) ii, n. sp.
- Pseudopanergus* = (*Protandrenopsis* Crawl.), COCKERELL, p. 26, Ann. Nat. Hist. xiv.
- P. pectidellus*, New Mexico, id., l. c. n. sp.
- Pterandrena oniscicolor*, *albuginosa*, *pallidiscopa*, *nudiscopa*, *pallidifovea*, *complexa*, *erigenoides*, *crypta*, p. 228, *acrypta*, *nudimediocornis*, p. 229, Oregon etc., VIERECK, Canad. Ent. xxxvi, n. spp.
- Ptiloglossa aculeata*, Brazil, p. 19, *eburnea*, Peru, p. 20, FRIESE, Zeitschr. Hym. Dipt. iv, n. spp.

- Ptilothrix nudipes* Burm. (as *Meliphila*)=(*similis* Fr.), FRIESE, p. 100, t. c.
Rhathymus and *Eurytis*, characters, COCKERELL, p. 208, Ann. Nat. Hist. xiv; *R. armatus*=(*Odyneropsis holosericea* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Robertsonella* n. g. *Osmiinae*, p. 22, *R. gleasoni* n. sp., Illinois, p. 23, TITUS, J. N. York Ent. Soc. xii.
- Saropoda alpha*, Australia, COCKERELL, p. 204, Ann. Nat. Hist. xiv, n. sp.
Scirtetica n. g. *Euceritæ*, p. 389, *S. antarctica* n. sp., Patagonia, p. 391, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Serapis rufipes*, Cape Colony, FRIESE, p. 106, Zeitschr. Hym. Dipt. iv, n. sp.
Serapista n. n. for *Serapis* Sm., COCKERELL, p. 357, Canad. Ent. xxxvi.
- Sphecodes* (*Drepanium*) *olympicus*, p. 230, *S. (Machaeris) washingtoni*, p. 231, *S. (S.) hesperellus, arvensiformis*, p. 232, Oregon etc., COCKERELL, Canad. Ent. xxxvi; *S. viganus, pecosensis*, New Mexico, COCKERELL, p. 5, Entomologist 1905; *S. arroyanus*, New Mexico, COCKERELL, p. 231, t. c.; *S. equator*, Ecuador, VACHAL, p. 314, Bull. Mus. Paris 1904; *S. lunaris*, Tucuman, VACHAL, p. 26, Rev. Ent. franc. xxiii : n. spp.
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- Svastra fulgurans*, Argentina, HOLMBERG, p. 388, An. Mus. Buenos Aires (3) ii, n. sp.
- Synhalonia frater aragalli* subsp. n., *S. crenulaticollis* var. n. *lippiae*, COCKERELL, p. 25, Ann. Nat. Hist. xiv.
- Tapinotaspis* n. g. p. 413, *T. chacabucensis, sabularum*, p. 415, n. spp., Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Teleutemnesta* n. g. p. 400, *T. fructifera*, p. 402, *scalaris, relata*, p. 403, *distincta*, p. 404, *separata*, p. 405, La Plata, n. spp., HOLMBERG, t. c.
- Tetralonia melanura*=(*Anthoph. grisea* Schl. and *Megach. gasperini* Schl., also *T. atrifrons* Sm.), FRIESE, p. 99, Zeitschr. Hym. Dipt. iv; *T. analis*=(*Macroglossa oribazi* Rad.), FRIESE, p. 100, t. c.
- Tetrapedia mexicana* Rad. as (*Epeicharis*)=(*fiorentinia* D. T.=*saussurei* Fr.), FRIESE, p. 100, t. c.
- T. tucumana, gaullei*, Tucuman, VACHAL, p. 22, Rev. Ent. franc. xxiii, n. spp.
- Thygater chrysophora*, Argentina, HOLMBERG, p. 386, An. Mus. Buenos Aires (3) ii, n. sp.
- Thyreothremma* n. g. *Euceritæ*, p. 391, *T. rhopalocera*, p. 393, *desiderata*, p. 395, *abscondita*, p. 396, La Plata, HOLMBERG, t. c. n. spp.
- Trachandrena amphibola*, p. 159, *indotata, ochropleura, crassihirta, perdensa, ladra, limarea*, p. 160, *cleodora, fuscicauda, auricauda, pernuda*, p. 161, Oregon etc., VIERECK, Canad. Ent. xxxvi, n. spp.
- Trachusa serratulæ*, habits, ADLERZ, pp. 121–129, Ent. Tidskr. xxv.
- Trichocerapis* n. g. type *Tetralonia mirabilis* Sm., COCKERELL, p. 292, Ent. News Philad. xv.
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- X. nautlana*, Mexico, COCKERELL, p. 30, Ann. Nat. Hist. xiv, n. sp.
- Zucesta*, referred to *Panurgidae*, characters, TITUS, p. 26, J. N. York Ent. Soc. xii.

VESPIDÆ, EUMENIDÆ, RHOPALOSOMIDÆ, MASARIDÆ.

[Cf. ADLERZ (14), BRÈTHES (176, 178, 180, 181), DU BUYSSON (218, 219), CAMERON (222, 223, 228–231, 234, 235), DALLA TORRE (342), DUCKE (411, 414), DUSMET (417), ENDERLEIN (457), FRIESE (541), VON IHERING (731), MORICE (959), NURSE (986), PECHLAUER (1014), PORTER (1099), SAUNDERS (1215), SAUSSURE (1218), SCHULTHESS-RECHBERG (1246), SCHULZ (1253, 1255), TULLGREN (1404).]

The genera and classification revised and the species listed, DALLA TORRE, Gen. Ins. *Vespidæ*, 108 pp., 6 plates.

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Habits of *Polistes biglumis* in Sweden, ADLERZ, pp. 97–106, Ent. Tidskr. xxv.

Alastor merceti, Alicante, DUSMET, p. 126, Bol. Soc. espan. iv; *A. anomalus*, p. 303, *schrottkyi*, p. 305, *argentinus*, p. 306, *persimilis*, p. 308, *elongatus*, p. 309, *arcuatus*, p. 310, S. America, BRÈTHES, An. Mus. Buenos Aires (3) ii : n. spp.

Alpha n. gr. of *Paragia*, DALLA TORRE, p. 4, *Vespidæ*.

Belenogaster petiolatus = (*brachycerus* Kohl), p. 461, *junceus*, nests, p. 453, TULLGREN, Arkiv Zool. i.

B. occidentalis, Cameroons, TULLGREN, p. 455, pl. xxv, fig. 14, t. c. n. sp.

Beta n. gr. of *Paragia*, DALLA TORRE, p. 4, *Vespidæ*.

Chartergus laticinctus, p. 330, *rufiventris*, p. 335, *pusillus*, p. 336, *nitidus*, p. 338, S. America, DUCKE, Bol. Mus. Gœldi iv, n. spp.

Ctenochilus argentinus, La Plata, BRÈTHES, p. 232, An. Mus. Buenos Aires (3) ii.

Deuteroapoica n. n. for *Apoica* pt., DALLA TORRE, p. 79, *Vespidæ*.

Deuterodiscalius n. gr. of *Discalius*, DALLA TORRE, p. 18, *Vespidæ*.

Discalius cuyanus, p. 234, *paranensis*, p. 236, *assimilis*, p. 238, *ater*, p. 239, *auritulus*, p. 241, *fluminensis*, p. 242, *nitidus*, p. 245, *prixii*, p. 246, *andinus*, p. 248, La Plata, BRÈTHES, An. Mus. Buenos Aires (3) ii, n. spp.

Eualastor n. gr. for part of *Alastor*, DALLA TORRE, p. 60, *Vespidæ*.

Euancistrocerus n. n. for *Ancistrocerus* s. str. Sauss., DALLA TORRE, p. 36, *Vespidæ*.

Euceramius n. gr. of *Cerannius*, DALLA TORRE, p. 5, *Vespidæ*.

Eudiscalius n. g. *E. metallicus* n. sp., Tenimber-Larat, FRIESE, Zeitschr. Hym. Dipt. iv.

Eupeipona n. n. for *Epiponus* s. str. Sauss., DALLA TORRE, p. 39, *Vespidæ*.

Eumenes latreillei, *petiolaris* and *butonensis* subsp. n., SCHULZ, pp. 217, 218, Berlin. ent. Zeitschr. xlix; *E. coarctatus* and *pomiformis*, ZAVATTARI, p. 8, Boll. Mus. Torino xix, No. 482.

E. gracillima, Cameroons, TULLGREN, p. 445, pl. xxiii, fig. 8, Arkiv Zool. i; *E. parvilineata*, Sikkim, CAMERON, p. 12, Zeitschr. Hym. Dipt. iv; *E. montana*, Quetta, NURSE, p. 26, J. Bombay Soc. xvi; *E. micado*, Japan, CAMERON, p. 35, Entomologist 1904; *E. alfkæni*, Obidos,

- DUCKE, p. 138, Zeitschr. Hym. Dipt. iv ; *E. autrani*, p. 252, *arechavaletæ*, p. 256, La Plata, *magna*, p. 258, Brazil, BRÈTHES, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Eumontezumia* **n. n.** for a division of *Montezumia*, DALLA TORRE, p. 27, Vespidae.
- Euodynerus* **n. n.** for *Odynerus* pt. SAUSS., DALLA TORRE, p. 38, Vespidae.
- Eupolistes* **n. gr.** for pt. of *Polistes*, DALLA TORRE, p. 68, Vespidae.
- Eupolybia* **n. subg.** for *Polybia* pt., DALLA TORRE, p. 76, Vespidae.
- Eurhynchium* **n. n.** for *Rygychium* div. I SAUSS., DALLA TORRE, p. 33, Vespidae.
- Eusynagris* **n. n.** for *Synagris*, div. I SAUSS., DALLA TORRE, p. 30, Vespidae.
- Euzethus* **n. gr.** for *Zethus* div. I SAUSS., DALLA TORRE, p. 14, Vespidae.
- Hymenosmithia* **n. n.** for *Smithia* SAUSS., DALLA TORRE, p. 61, Vespidae.
- Icaria singapurensis*, p. 120, *rufinoda*, p. 121, Singapore, CAMERON, J. Straits Asiat. Soc. xli, **n. spp.**
- Icariastrum* **n. n.** for *Icaria* Sect. I SAUSS., DALLA TORRE, p. 72, Vespidae.
- Icariella* **n. n.** for *Icaria* Sect. II SAUSS., DALLA TORRE, p. 72, Vespidae.
- Icariola* **n. n.** for *Icaria* Sect. III SAUSS., DALLA TORRE, p. 72, Vespidae.
- Juartinia indica*, Deesa, CAMERON, p. 89, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Leontiniella* **n. g.** near *Monobia*, *L. argentina* **n. sp.**, Argentina, BRÈTHES, p. 265, An. Mus. Buenos Aires (3) ii.
- Macrovespa* **n. n.** for part of *Vespa*, DALLA TORRE, p. 64, Vespidae.
- Masaris alfkeni*, Damara land, DU BUYSSON, p. 144, Bull. Soc. ent. France 1904, **n. sp.**
- Megacanthopus* **n. g.** near *Polybia*, p. 358, with *M. collaris*, *lecointei*, p. 361, *alfkeni*, *imitator*, p. 362, *punctatus*, p. 363, **n. spp.**, S. America, DUCKE, Bol. Mus. Gældi iv.
- Monobia angulosa* var. *n. cingulata*, BRÈTHES, p. 264, An. Mus. Buenos Aires (3) ii.
- M. atrorubra*, Pará, DUCKE, p. 142, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Montezumia saussurei* to *Nortonia*, SCHULTHESS-RECHBERG, p. 270, Zeitschr. Hym. Dipt. iv.
- M. bruchii*, Argentina, id. p. 263, t. c. ; *M. difficilis*, Pará, DUCKE, p. 141, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Nortonia*, table of species, SCHULTHESS-RECHBERG, p. 270, Zeitschr. Hym. Dipt. iv.
- N. polybioides*, p. 272, *lugens*, p. 274, Peru, *bifasciata*, p. 275, *steinbachi*, p. 277, Tucuman, SCHULTHESS-RECHBERG, t. c. ; *N. sulcata*, Pará, DUCKE, p. 140, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Odynerus argentinus*, nesting habits, BRÈTHES, p. 204, pl. i, Revist. Mus. La Plata x.
- O. eatoni*, Tenerife, SAUNDERS, p. 203, Ent. Mag. xl ; *O. (? Ancistrocerus) aberraticus*, White Nile, MORICE, p. 4, Jägerskiöld exp. No. 14 (but see Zool. Rec. 1903) ; *O. fulcatus*, Cameroons, TULLGREN, p. 452, pl. xxv, fig. 13, Arkiv Zool. i ; *O. camicus*, Darjiling, CAMERON, p. 259, Entomologist 1904 ; *O. rhipheus*, p. 308, *tytides*, p. 309, Darjiling, CAMERON, Entomologist 1904 ; *O. declivus*, p. 273, *acuminatus*, p. 274, *montevidensis*, p. 276, *subtropicalis*, p. 278, *lynchii*, p. 279, *catamarcensis*, p. 283, *arechavaletæ*, p. 285, *cuyanus*, p. 287, *heptagonalis*, p. 289, *punctatus*, p. 290, *bruchii*, p. 292, *ameghinoi*, p. 300, *schrötkyi*, p. 302, *patagonus*, p. 312, S. Amer., Bolivia, Patagonia, BRÈTHES, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Parachartergus* and *P. bentobuenoi*, IHERING, Bull. Soc. ent. France 1904, p. 84.
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- Polistella* **n. g.** for *Polistes manillensis*, ASHMEAD, p. 133, P. U. S. Mus. xxviii.

- Polistes tepidus novæ-pomeraniæ* subsp. n., p. 227, *P. marginalis papuanus* subsp. n., p. 231, SCHULZ, Berlin. ent. Zeitschr. xlix; *P. crinitus* = (*annularis* and *pallipes* Schrottky), BRÈTHES, p. 24, An. Mus. Buenos Aires (3) ii.
- P. inornatus*, Cameroons, TULLGREN, p. 456, pl. xxv, fig. 15, Arkiv Zool. i; *P. niger*, Brazil, BRÈTHES, p. 20, An. Mus. Buenos Aires (3) ii; *P. gældii*, p. 368, *biglumoides*, p. 369, *claripennis*, p. 370, *rufiventris*, *occipitalis*, p. 371, S. America, DUCKE, Bol. Mus. Gældi iv : n. spp.
- Polistoides* n. gr. for pt. of *Polistes*, DALLA TORRE, p. 68, Vespidae.
- Polybia furnaria*, p. 85, *ypiranguensis*, p. 86, IHERING, Bull. Soc. ent. France 1904; *P. jurinei* var. n. *bonaërense*, BRÈTHES, p. 28, An. Mus. Buenos Aires (3) ii.
- P. pseudomimetia*, Amazons, SCHULZ, p. 803, SB. Ak. Munchen 1903; *P. huberi*, *holoxantha*, p. 349, *micans*, *rufitarsis*, p. 351, *vulgaris*, p. 352, *lutea*, p. 353, *obidensis*, p. 354, *lignicola*, *cementaria*, p. 355, *sculpturata*, p. 356, S. America, DUCKE, Bol. Mus. Gældi iv : n. spp.
- Protapoica* n. n. gr. for *Apoica* pt., DALLA TORRE, p. 79, Vespidae.
- Protodiscalius* n. gr. of *Discalius*, DALLA TORRE, p. 18, Vespidae.
- Rhynchium hemorrhoidale dohertyi* subsp. n., SCHULZ, p. 223, Berlin. ent. Zeitschr. xlix; *R. sirdari*, Khartoum, MORICE, p. 4, Jägerskiöld exp. No. 14, n. sp. (but see Zool. Rec. 1903).
- Synagris trispinosa*, p. 447, pl. xxiv, fig. 9, *rufopicta*, fig. 10, p. 448, *uncata*, fig. 11, p. 449, *4-punctata*, fig. 12, p. 450, Cameroons, TULLGREN, Arkiv Zool. i, n. spp.
- Tetrarthra* n. gr. of *Monobia*, DALLA TORRE, p. 28, Vespidae.
- Triarthra* n. gr. of *Monobia*, DALLA TORRE, p. 28, Vespidae.
- Trimeria buyssoni*, Argentina, BRÈTHES, p. 371, An. Mus. Buenos Aires (3) ii, n. sp.
- Tritodiscalius* n. gr. of *Discalius*, DALLA TORRE, p. 18, Vespidae.
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- Wettsteinia* n. g. for *Labus* Sect. II Sauss., DALLA TORRE, p. 13, Vespidae.
- Zethoides* n. g. *Masaridae*, p. 93, *Z. flavolineatus* n. sp., Panama, p. 94, CAMERON, Tr. Amer. ent. Soc. xxx.
- Zethus broomi*, S. Africa, CAMERON, p. 110, Rec. Albany Mus. i; *Z. himalayensis*, p. 13, *3-maculatus*, p. 14, Sikkim, CAMERON, Zeitschr. Hym. Dipt. iv; *Z. corallinus*, p. 135, *dimidiatus*, p. 136, Pará, DUCKE, Zeitschr. Hym. Dipt. iv : n. spp.

HYMENOPTERA FOSSORIA (or SPHEGOIDEA).

[Cf. ADLERZ (13, 16), ANDRÉ (28–30), ASHMEAD (44, 46, 47, 48), AURIVILLIUS (59), BRÈTHES (181), DU BUYSSON (219), CAMERON (222, 224, 225, 227–230, 232–234, 238), DUCKE (413), ENDERLEIN (458), GARCIA (587, 588), KOPP (840), MANTERO (904), NURSE (986), PICARD (1080), SAUNDERS (1214, 1215), SAUSSURE (1218), SCHULZ (1253, 1254), TULLGREN (1404, 1405), VIERECK (1445, 1446, 1449, 1453), VIERECK & COCKERELL (1455).]

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- Classification of *Mutillidae* completed, ASHMEAD, pp. 5–9, Canad. Ent. xxxvi; *Mutillidae*, Ashmead's genera detailed and criticised, ANDRÉ, pp. 27–41, Rev. Ent. franc. xxiii.
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- Æluroides* n. g. *Thynnidae*, p. 428, *Æ. sjostedti* n. sp., Cameroons, p. 429, TULLGREN, Arkiv Zool. i.
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- Ammophila bolanica* ♂, NURSE, p. 25, J. Bombay Soc. xvi; *A. sabulosa*, habits, KOPP, pp. 344–346, Jahresh. Ver. Wurttemb. lx.
- Ammoplanus ceanothæ*, Pennsylvania, VIERECK, p. 72, Psyche xi, n. sp.
- Ampulex hellmayri*, Amazons, SCHULZ, p. 760, SB. Ak. Munchen 1903, n. sp.
- Anodontyna tricolor* ♀, p. 317, *albofasciata* ♂, p. 318, ANDRÉ, Zeitschr. Hym. Dipt. iv.
- Anoplius johannis*, p. 126, *oneili*, p. 127, *A. (Ferrolea?) gradatus*, *A. (Schizosalius?) melanostomus*, p. 128, *A. argenteodecoratus*, p. 129, *dunbrodyensis*, p. 130, *labialis*, *spilopus*, p. 131, *kirtiscapus*, p. 132, *trichiocephalus*, p. 133, *A. (Homonotus) spilonotus*, p. 134, *A.? cænoceras*, p. 135, Cape Colony, CAMERON, Rec. Albany Mus. i, n. spp.
- Anothyreus panurgoides*, Pennsylvania, VIERECK, p. 239, Tr. Amer. ent. Soc. xxx, n. sp.
- Apteropompilus dentatus*, Uitenhage, CAMERON, p. 176, Zeitschr. Hym. Dipt. iv, n. sp.
- Astata lucinda*, Quetta, NURSE, p. 25, J. Bombay Soc. xvi, n. sp.
- Aulacophilus eumenoides*, Pará, DUCKE, p. 97, Zeitschr. Hym. Dipt. iv, n. sp.
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- B. handlirschi*, p. 343, *miscella*, p. 345, *hispanica*, p. 347, Spain, GARCÍA, t. c.; *B. megadonta*, Darjiling, CAMERON, p. 261, Entomologist 1904; *B. khasiana*, Assam, CAMERON, p. 123, Tr. ent. Soc. London 1904 : n. spp.
- Bembidula simillima* Sm. redescribed, DUCKE, p. 91, Zeitschr. Hym. Dipt. iv.
- Bothynostethus collaris*, Pará, p. 95, *clypealis*, Alemquer, p. 189, DUCKE, t. c. n. spp.
- Cerceris rybensis dittrichi* subsp. n., SCHULZ, p. 93, Zeitschr. Ent. Breslau xxix.
- C. violaceipennis*, p. 292, *latibalteata*, p. 293, N. India, CAMERON, Ann. Nat. Hist. xiii; *C. japonica*, *quinquecincta*, Japan, ASHMEAD, p. 66, J. N. York Ent. Soc. xii; *C. nasica*, *fidelis*, p. 132, *platyrhina*, *macrosticta*, p. 133, *ferruginior*, p. 134, *garciana*, *populorum*, *femur-rubrum*, p. 135, *convergens*, *chilopsidis*, p. 136, *rinconis*, *novomexicana*, p. 137, *crotonella*, *erigoni*, p. 139, *townsendi*, *vicinoides*, p. 140, New Mexico, VIERECK & COCKERELL, J. N. York Ent. Soc. xii; *C. perspicua*, p. 475, *paupercula*, *levigata*, p. 476, *moyanoi*, p. 477, *caridei*, p. 478, *probo-scidea*, p. 479, *diademata*, p. 480, *melanogaster*, *gaudebunda*, p. 481, *polychroma*, p. 483, *campestris*, p. 484, *elephantinops* with var. *dissita*, p. 485, *bonaërensis*, p. 486, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : n. spp.
- Ceropales maculata*, parasitic habits, ADLERZ, Bih. Svenska Ak. xxviii, Afd. iv, No. 14, 20 pp.
- C. punctulata*, Cape Colony, CAMERON, p. 138, Rec. Albany Mus. i, n. sp.

- Chlorion cyaneum*, synonymy, FERNALD, p. 120, Ent. News Philad. xv;
C. lobatus, food-habits, MAXWELL-LEFROY, p. 531, J. Bombay Soc. xv.
Clytochrysis dubiosus, Japan, ASHMEAD, p. 65, J. N. York Ent. Soc. xii,
n. sp.
Crabro alatus japonicus subsp. n., SCHULZ, p. 99, Zeitschr. Ent. Breslau
 xxix.
C. trichiosomus, p. 260, *agyeus*, p. 261, Himalaya, CAMERON, Entomologist
 1904, **n. spp.**
Dasyproctus philippinensis, Manila, ASHMEAD, p. 129, P. U. S. Mus. xxviii,
n. sp.
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cornis, Oregon, VIERECK, p. 243, Tr. Amer. ent. Soc. xxx : **n. spp.**
Dolichomutilla bolamana, W. Africa, ANDRÉ, p. 223, Ann. Mus. Genova xli,
n. sp.
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 Dipt. iv.
Elaphroptera herbsti, Chile, ANDRÉ, p. 308, Zeitschr. Hym. Dipt. iv, **n. sp.**
Entomognathus lenapeorum, Pennsylvania, VIERECK, p. 239, Tr. Amer. ent.
 Soc. xxx, **n. sp.**
Ephuta (Photopsis) chilicola, Chile, ANDRÉ, p. 306, Zeitschr. Hym. Dipt. iv,
n. sp.
Ephutopsis **n. g.** *Ephutinae*, type *trinidadensis* Ashm., ASHMEAD, p. 6,
 Canad. Ent. xxxvi.
Eucerceris, tables of species, VIERECK & COCKERELL, pp. 84–88, J. N. York
 Ent. Soc. xii.
E. striareata, p. 85, *chapmanæ*, p. 86, *simulatrix*, p. 87, New Mexico, iid.
 t. c. **n. spp.**
Euspinolia, characters and components, ANDRÉ, p. 286, Zeitschr. Hym.
 Dipt. iv.
Gorytes levis ægyptiacus subsp. n., SCHULZ, p. 96, Zeitschr. Ent. Breslau
 xxix; *G. scutellaris*=(*Harpactes sanguinans* Dom.), *G. triangularis*
 Sm., taxonomical characters, DUCKE, p. 92, Zeitschr. Hym. Dipt. iv.
Homalothynnus **n. g.** *Thynnida*, p. 466, *H. eburneus* **n. sp.**, Adelaide,
 p. 468, ENDERLEIN, Zool. Anz. xxvii.
Ischnolynthus **n. g.** near *Crabro*, *I. foveolatus* **n. sp.** Argentina, HOLMBERG,
 p. 472, An. Mus. Buenos Aires (3) ii.
Larra bicolorata, p. 294, *pygidialis*, p. 295, N. India, CAMERON, Ann. Nat.
 Hist. xiii; *L. apicepennis*, N. India, CAMERON, p. 302, t. c. : **n. spp.**
Liris violaceipennis, N. India, CAMERON, p. 300, Ann. Nat. Hist. xiii, **n. sp.**
Macromeris honestus, Sm. (as *Pompilus*)=(*aureopilosa* Cam.), CAMERON,
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Megalomma quadricinctum, Manila, ASHMEAD, p. 132, P. U. S. Mus. xxviii,
n. sp.
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 1904, **n. sp.**
Monedula surinamensis, nesting habits, BRÈTHES, pp. 200–204, Revist. Mus.
 La Plata x.
Mutilla alecto, *M. æstuans* Gerst. is ♀, p. 227, *M. atricolor* ♂, p. 233,
 var. n. *ochraceomaculata*, p. 234, *M. cyparissa* ♀, p. 236, ANDRÉ,
 Ann. Mus. Genova xli.
M. sordidata, Cameroons, TULLGREN, p. 427, Arkiv Zool. i; *M. auro-*
decorata, p. 229, *omissa*, p. 231, *ignota*, p. 240, *principis*, p. 242,
polyacantha, p. 245 & var. *dichromatica*, p. 246, *sessiliventris*, p. 246,
varians, p. 247, *spinicollis*, p. 250, W. Africa, ANDRÉ, Ann. Mus.
 Genova xli; *M. vesta*, India, NURSE, p. 24, J. Bombay Soc. xvi; *M. inoa*,

- p. 279, *artaxa*, *trebia*, p. 280, N. India, CAMERON, Ann. Nat. Hist. xiii; *M. seeva*, p. 6, *gnatia*, p. 7, *tiza*, p. 8, Khasia hills, CAMERON, Zeitschr. Hym. Dipt. iv; *M. semperi*, Manila, ASHMEAD, p. 135, P. U. S. Mus. xxviii : **n. spp.**
- Myrmilla subspinoso*, W. Africa, ANDRÉ, p. 222, Ann. Mus. Genova xli, **n. sp.**
- Myzine*, *Apis fusiformis* De Geer, to this, TULLGREN, p. 462, Arkiv Zool. i. *Nectanebus fischeri fischeri*, and *fischeri algeriensis*, SCHULZ, pp. 9–11, Allg. Zeitschr. Ent. ix.
- Notogonia manila*, Philippines, ASHMEAD, p. 130, P. U. S. Mus. xxviii, **n. sp.**
- Nysson laufferi*, Madrid, GARCÍA, p. 392, Bol. Soc. espan. iv; *N. violaceipennis*, Sikkim, CAMERON, p. 10, Zeitschr. Hym. Dipt. iv; *N. submellipes*, *tramosericus*, p. 237, *daeckei*, p. 238, N. America, VIERECK, Tr. Amer. ent. Soc. xxx; *N. cressoni*, N. Mexico, CAMERON, p. 95, Tr. Amer. ent. Soc. xxx; *N. alfkeni*, Amazons, DUCKE, p. 190, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Ochleroptera* **n. g.** *O. oblita* **n. sp.**, Argentina, HOLMBERG, p. 487, An. Mus. Buenos Aires (3) ii.
- Odontolarra nigra*, Sikkim, CAMERON, p. 12, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Odontophotopsis acmæus*, p. 84, *subtenuis*, *trunculus*, p. 85, *crucis*, p. 86, *sercus*, *alamonis*, p. 87, *avellanus*, p. 88, *fallax*, *indotatus*, p. 89, *augustus*, p. 90, *delodontus*, p. 91, VIERECK, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Odonthynnus* **n. g.** *Thynnides*, p. 161, *O. bidentata*, *lacteipennis*, p. 162, **n. spp.**, S. Africa, CAMERON, Rec. Albany Mus. i.
- Ornepetes albonotata*, Chile, ANDRÉ, p. 314, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Oxybelus platensis*, Buenos Aires, **n. sp.**, p. 195, with notes on habits and instincts, pp. 196–200, pl. i, BRÈTHES, Revist. Mus. La Plata x.
- Paniscomima* **n. g.** *Rhopalosomida*, p. 465, for *P. erlangeriana* **n. sp.**, Somaliland, p. 466, ENDERLEIN, Zool. Anz. xxvii.
- Paranothyreus rugicollis*, New Jersey, VIERECK, p. 241, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Paratiphia 12-maculata*, Panama, CAMERON, p. 94, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Passalaccus* (sic) *river-tonensis*, New Jersey, VIERECK, p. 243, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Philanthus camerunensis*, Africa, TULLGREN, p. 444, pl. xxiii, fig. 7, Arkiv Zool. i; *P. punctinudus*, p. 144, *crotoniphilus*, p. 145, New Mexico, VIERECK & COCKERELL, J. N. York Ent. Soc. xii : **n. spp.**
- Piagetia varicornis*, Sikkim, CAMERON, p. 11, Zeitschr. Hym. Dipt. iv; *P. ruficollis*, Singapore, CAMERON, p. 119, J. Straits Asiat. Soc. xli : **n. sp.**
- Pison pallidipalpe*, description, SCHULZ, p. 214, Berlin. ent. Zeitschr. xlix.
- P. laguna*, Philippines, ASHMEAD, p. 131, P. U. S. Mus. xxviii, **n. sp.**
- Pisonitus argenteus*, Philippines, ASHMEAD, p. 131, t. c. **n. sp.**
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- Pompilus viaticus*, habits, PICARD, pp. 142–145, Feuille Natural. xxxiv.
- P. dorie*, Tuscany, MANTERO, p. 453, Ann. Mus. Genova xli; *P. poultoni*, Majorca, SAUNDERS, p. 600, Tr. ent. Soc. London 1904; *P. guimarensis*, Tenerife, SAUNDERS, p. 200, Ent. Mag. xl; *P. bifusciatus*, Cameroons, TULLGREN, p. 441, pl. xxiii, fig. 6, Arkiv Zool. i; *P. suspectus*, Cambodia, pl. xii, fig. 4, p. 200, SAUSSURE, Mission Pavie iii; *P. spilopterus*, p. 496, *phœnicogaster*, p. 497, *tobarum*, p. 498, *autrani*, p. 499, *hermannii*, p. 501, *yanketruz*, p. 502, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**

- Prionocnemis parcedentatus*, Tonkin, pl. xii, fig. 3, p. 200, SAUSSURE, Mission Pavie iii; *P. australis*, p. 490, *pampicola*, *fratellus*, *atelerythrus*, p. 491, *tenuis*, *ignitus*, *fidanza*, p. 492, *nigrorufus*, *carbonarius*, *silvicola*, p. 493, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Psen rufobalteata*, Khasia hills, CAMERON, p. 219, Ann. Nat. Hist. xiii, **n. sp.**
- Pseudagenia longitarsis*, p. 135, *robusta*, p. 136, *iridipennis*, *æthiopica*, p. 137, Cape Colony, CAMERON, Rec. Albany Mus. i; *P. lepcha*, N. India, CAMERON, p. 291, Ann. Nat. Hist. xiii; *P. unifasciata*, Philippines, ASHMEAD, p. 7, J. N. York Ent. Soc. xii : **n. spp.**
- Pseudelaphroptera flavomaculata*, Chile, ANDRÉ, p. 311, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Pseudomethoca herbsti*, Chile, ANDRÉ, p. 284, t. c. **n. sp.**
- Pseudosalius n. g.* for *Salius bipartitus* Lep., ASHMEAD, p. 132, P. U. S. Mus. xxvii.
- Pycnomutilla n. g.* type *M. waco* Bl., ASHMEAD, p. 8, Canad. Ent. xxxvi.
- Reedia n. g.* type *Mutilla atripennis* Spin., ASHMEAD, p. 9, t. c.; *Reedia*, characters, p. 288, *R. gayi* ♂, p. 305, ANDRÉ, Zeitschr. Hym. Dipt. iv.
- Rhopalum albocollare*, Manila, ASHMEAD, p. 130, P. U. S. Mus. xxviii; *R. patagonicum*, p. 470, *lynchii*, p. 471, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Salius ochropus* Stål., description, p. 435, pl. xxii, fig. 1, TULLGREN, Arkiv Zool. i; *S. fulgidipennis* to *Pallosoma*, ASHMEAD, p. 132, P. U. S. Mus. xxviii.
- S. trichiosoma*, p. 289, *frederici*, p. 290, *lugubrinus*, p. 291, N. India, CAMERON, Ann. Nat. Hist. xiii; *S. æneus*, Sikkim, CAMERON, p. 10, Zeitschr. Hym. Dipt. iv; *S. pavianus*, Cambodia, pl. xii, figg. 1, 2, p. 199, SAUSSURE, Mission Pavie iii : **n. spp.**
- Sapyga wagneriella*, Minas Geraes, DU BUYSSON, p. 146, Bull. Soc. ent. France 1904, **n. sp.**
- Schizanoptilus n. g.* *Ceropalina*, p. 125, *S. violaceipennis n. sp.*, Cape Colony, p. 126, CAMERON, Rec. Albany Mus. i.
- Scolia*, notes on species from Java etc., TULLGREN, pp. 465–472, Arkiv Zool. i; *S. erythrogaster*, p. 459, *leonina*, p. 461, identified and redescribed, TULLGREN, t. c.
- S. (Eliis) propinqua*, p. 432, *deserta*, *æthiopica*, p. 433, Cameroons, TULLGREN, Arkiv Zool. i; *S. magnificus*, p. 437, pl. xxii, fig. 2, *nigricans*, fig. 3, p. 438, *S. (Cyphonyx) camerunensis*, pl. xxiii, fig. 4, p. 439, *nigricornis*, fig. 5, p. 440, Cameroons, TULLGREN, Arkiv Zool. i; *S. (Discolia) erythrotrichia*, N. India, CAMERON, p. 9, Zeitschr. Hym. Dipt. iv; *S. (Triscolia) triangulifer*, p. 466, *S. (Discolia) billitonensis*, p. 467, *S. (Dielis) simillima*, p. 470, *fumata*, p. 471, Java, TULLGREN, Arkiv Zool. i; *S. manila*, Philippines, ASHMEAD, p. 8, J. N. York Ent. Soc. xii : **n. spp.**
- Solenius*, note on habits, KOPP, pp. 348–350, Jahresh. Ver. Wurttemb. lx.
- Soleriella canariensis*, Tenerife, SAUNDERS, p. 201, Ent. Mag. xl; *S. amazonica*, Alemquer, DUCKE, p. 96, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Stenocrabro nelli*, p. 241, *flavitrochantericus*, p. 242, N. America, VIERECK, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Stizus pæcilopterus* ♂, MORICE, p. 2, Jägerskiöld exp. No. 14; *S. tridens* and *cyanescens*, SCHULZ, p. 95, Zeitschr. Ent. Breslau xxix.
- Tachysphex tinctipennis*, N. India, CAMERON, p. 301, Ann. Nat. Hist. xiii; *T. propinquus*, Arizona, VIERECK, p. 87, Ent. News Philad. xv : **n. spp.**
- Tachytes rufipalpis*, p. 296, *assamensis*, *fulvopilosa*, p. 297, *fulvovestita*, p. 298, *maculipennis*, p. 299, N. India, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
- Thyreosphex n. g.* near *Tachysphex*, *T. stantoni n. sp.*, Philippines, ASHMEAD, Canad. Ent. xxxvi.

- Tiphia clarinerva*, p. 281, *himalayensis*, p. 282, *robusta*, p. 283, *denticula*, p. 284, *tuberculata*, p. 285, *fulvinerva*, p. 286, *simlaensis*, p. 287, *quinquecarinata*, p. 288, N. India, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
- Trachypus martialis*, Argentina, HOLMBERG, p. 489, An. Mus. Buenos Aires (3) ii, **n. sp.**
- Trypoxylon foveatum*, Cape Colony, CAMERON, p. 139, Rec. Albany Mus. i; *T. plucidum*, p. 216, *fulvocollare*, p. 217, *hasia*, *orientale*, p. 218, N. India, CAMERON, Ann. Nat. Hist. xiii; *T. philippinensis*, Manila, ASHMEAD, p. 283, Canad. Ent. xxxvi : **n. spp.**

FORMICIDÆ (or HETEROGYNA).

- [Cf. COOK (309–311), EMERY (452, 453), FIELDE (501–507), FIELDE & PARKER (508), FOREL (523–532), HOLMGREN (701), MAYR (927, 928), MUCKERMANN (968), RUZSKY (1202), WASMANN (1481, 1483, 1484, 1484A), WELLENUS (1508), WHEELER (1517–1523).]
- Comparison of forms of *Doryline* and limits of the family, EMERY, Arch. zool. ital. ii, pp. 107–116, cuts.
- New inquiline and ♂ ergatoid ants, WHEELER, Bull. Amer. Mus. xx, pp. 1–17.
- Polymorphism discussed, EMERY (452), FOREL (525).
- Mental capacities of Ants, WASMANN (1483).
- For various papers on habits of ants see p. 87, Ethology.
- Mounds in swamps due to *Formica exsecta*, HOLMGREN, pp. 353–370, cuts, Zool. Jahrb. Syst. xx.
- Portable nests, instructions for making, FIELDE (505).
- Acanthostichus texanus*, Brownsville, FOREL, p. 168, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Anochetus traogaordhi*, Khartoum, MAYR, p. 2, Jägerskiöld exp. No. 9, **n. sp.**
- Anomma emeryi* var. n. *pulsi*, FOREL, p. 170, Ann. Soc. ent. Belgique xlviii.
- Atta cephalotes* varr. n. *opaca*, *integrrior*, p. 31, *A. rugosa* var. n. *rochai*, p. 34, FOREL, Rev. Suisse Zool. xii; *A. coronata*, worker, FOREL, p. 176, Ann. Soc. ent. Belgique xlviii.
- A. (Acromyrmex) emilii*, Para, FOREL, p. 32, Rev. Suisse Zool. xii, **n. sp.**
- Azteca schumanni* var. n. *teditosa*, p. 42, *festai subdentata* and *mediops* subspp. n. p. 43, *chartifex* var. n. *decipiens*, *alfaroi* var. n. *oraticeps*, p. 44, *velox paraensis* subsp. n. p. 45, FOREL, t. c.; *A. alfari æquilata* var. n. p. 691, *traili filicis* var. n. p. 692, *traili tococæ* var. n. p. 693, *longiceps juruensis* var. n. p. 699, FOREL, Zool. Jahrb. Syst. xx.
- A. olitrix*, p. 693, *ulei*, p. 694, with varr. n. *cordie* and *nigricornis*, p. 695, *minor*, p. 696, *duroie*, p. 697, *emeryi*, p. 698, *coussapocæ*, p. 700, *tachigalie*, p. 701, Amazonis, *emnce*, Costa Rica, p. 702, FOREL, t. c. **n. spp.**
- Camponotus maculatus* var. n. *atramentarius*, p. 379, *herculeanus* var. n. *sachalinensis*, p. 381, FOREL, Annuaire Mus. St. Petersb. viii; *C. maculatus* var. n. *cachmiriensis*, FOREL, p. 29, Rev. Suisse Zool. xii; *C. hyatti* var. n. *bakeri*, WHEELER, p. 271, Bull. Amer. Mus. xx; *C. maculatus sanctus* n. st., FOREL, p. 18, Rev. Suisse Zool. xii; *C. maculatus ballioni* n. st., FOREL, p. 176, Ann. Soc. ent. Belgique xlviii, *C. maculatus xerxes* n. st., FOREL, p. 424, t. c., *C. herculeanus* var. *whymperi*, characters, FOREL, p. 152, t. c.; *C. senex*, using larva, p. 45, *C. urickii* var. n. *sculna* and subsp. n. *folicola*, p. 46, *melanoticus* a valid species, p. 49, *C. integellus*=(*rudigenis* Em.), *femoratus* redescribed, p. 49, *nocogranadensis* var. n. *modestior*, *rectangularis* var. n. *setipes*, p. 51, FOREL, Rev. Suisse Zool. xii.
- C. socrates*, N. India, FOREL, p. 27, t. c.; *C. ulei*, Peru, FOREL, p. 706, Zool.

- Jahrb. Syst. xx; *C. amoris*, Amazons, FOREL, p. 51, Rev. Suisse Zool. xii : **n. spp.**
- Cardiocondyla nuda*, ergatomorph ♂, ♀, FOREL, p. 7, t. c.
- Carebara sicheli* redescribed, MAYR, p. 596, Verh. Ges. Wien liv.
- C. junodi*, Africa, FOREL, p. 154, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Colobopsis*, or stopper-headed ants, account of, FOREL, pp. 139–158, cuts, *C. abditus* var. *n. etiolatus*, p. 150, WHEELER, Bull. Amer. Mus. xx.
- C. pylartes*, Texas, WHEELER, p. 147, t. c. **n. sp.**
- Cremastogaster stollii amazonensis* var. *n.* p. 682, *C. limata parabiatica* subsp. *n.* p. 683, FOREL, Zool. Jahrb. Syst. xx; *C. dalyi* var. *n. sikkimensis*, FOREL, p. 24, Rev. Suisse Zool. xii, *C. inermis lucida* ♂, FOREL, p. 6, t. c., *C. longispina tenuicola* subsp. *n.* p. 36, *distans paraensis* *n. st.* p. 37, FOREL, t. c.
- C. binghamii*, Sikkim, FOREL, p. 24, t. c., *C. pygmæa*, Ceara, FOREL, p. 37, t. c. : **n. spp.**
- Cryptocerus complanatus ramiphilus* subsp. *n.*, FOREL, p. 678, Zool. Jahrb. Syst. xx.
- Dolichoderus plagiatus* var. *n. beutenmulleri*, WHEELER, p. 304, Bull. Amer. Mus. xx.
- Dorylus nigricans* varr. p. 671, *fulvus dentifrons* subsp. *n.* p. 673, WASMANN, Zool. Jahrb. Suppl. vii.
- D. (Anomma) kohli*, Congo, WASMANN, p. 669, t. c. **n. sp.**
- Dorymyrmex goldii*, Para, FOREL, p. 41, Rev. Suisse Zool. xii; *D. antarcticus*, Patagonia, FOREL, p. 6, Hamburg. Magalhaen. Reise vii : **n. spp.**
- Eciton selysi*, Brazil, FOREL, p. 169, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Ectatomma ferrugineum*, pupation, COOK, p. 310, and WHEELER, pp. 437–440, Science xx.
- Epipheidole n. g.* near *Pheidole*, p. 14, *E. inquilina* **n. sp.**, Colorado, p. 15, WHEELER, Bull. Amer. Mus. xx.
- Euponera (Mesoponera) sulcigera*, Cape colony, MAYR, p. 593, Verh. Ges. Wien liv, **n. sp.**
- Formica fusca* var. *n. rubescens*, FOREL, p. 423, Ann. Soc. ent. Belgique xlviii; *F. rufa* var. *n. whymperi*, p. 152, *dacotensis* var. *n. wasmanni*, p. 153, FOREL, t. c.; *F. pallidefulva* varr. *n. succinea*, p. 369, *meridionalis*, p. 370, *F. difficilis* var. *n. consocians*, p. 371, *F. microgyna* var. *n. nevadensis*, p. 373, WHEELER, Bull. Amer. Mus. xx; *F. rubicunda*, pseudogynes and *Xenodusa*, MUCKERMANN, Ent. News Philad. xv, pp. 339–341, pl. xx; *F. sanguinea*, habits, WASMANN (1484).
- F. adelungi*, Gobi desert, FOREL, p. 385, Annuaire Mus. St. Petersb. viii; *F. montigena*, Colorado, WHEELER, p. 374, Bull. Amer. Mus. xx : **n. spp.**
- Iridomyrmex anceps* var. *n. sikkimensis*, FOREL, p. 27, Rev. Suisse Zool. xii.
- Lasius niger* var. *n. flavescens*, FOREL, p. 386, Annuaire Mus. St. Petersb. viii.
- Leptanilla*, affinities, EMERY, pp. 107–116, Arch. Zool. ital. ii.
- Leptogenys elongata*, characters and habits, WHEELER, Biol. Bull. vi, pp. 251–259.
- Leptothorax bulgaricus* var. *n. melleus*, FOREL, p. 375, Annuaire Mus. St. Petersb. viii; *L. unifasciatus* var. *n. tauricus*, RUZSKY, p. 22, Protok. Kazan Univ. 1902, 1903, No. 206; *L. rothneyi* var. *n. similensis*, FOREL, p. 22, Rev. Suisse Zool. xii; *L. tuberum* var. *n. dichroa*, EMERY, p. 452, Ann. Mus. Genova xli.
- L. alpinus*, Caucasus. RUZSKY, p. 22, Protok. Kazan Univ. 1902, 1903, No. 6; *L. wroughtonii*, N. India, FOREL, p. 22, Rev. Suisse Zool. iii : **n. spp.**
- Megalomyrmex emeryi*, Surinam, FOREL, p. 174, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Melophorus valdivi*, Patagonia, p. 4, *valdiviensis*, Chile, p. 6, FOREL, Hamburg. Magalhaen. Reise vii, **n. spp.**

- Monomorium minutum ergatogyna* subsp. n., WHEELER, p. 269, Bull. Amer. Mus. xx; *M. denticulatum* var. n. *navarinensis*, FOREL, p. 7, Hamburg. Magalhaen. Reise vii.
- M. luisæ*, Kashmir, FOREL, p. 25, Rev. Suisse Zool. xii, **n. sp.**
- Myrmecocystus viaticus* varr. n. *abyssinicus* and *adenensis*, FOREL, p. 382, Annuaire Mus. St. Petersb. viii.
- Myrmelachista ruzskyi* for *ruszkii*, FOREL, p. 1, Rev. Suisse Zool. xii.
- M. ulei*, Peru, *chilensis*, p. 704, *rectinota*, p. 705, Chile, FOREL, Zool. Jahrb. Syst. xx, **n. spp.**
- Myrmica rubra* varr. n. *whymperi*, *glacialis*, FOREL, p. 154, Ann. Soc. ent. Belgique xlviii; *M. rubra* var. n. *tenuispina*, FOREL, p. 374, Annuaire Mus. St. Petersb. viii; *M. smythiesii* varr. n. *fortior*, p. 22, *lutescens*, p. 23, FOREL, Rev. Suisse Zool. xii.
- Oxyopomyrmex santschii*, Kairouan, FOREL, p. 8, nest and habits, p. 10, t. c. **n. sp.**
- Paltothyreus tarsatus*, offensive odour, POULTON, p. xl, P. ent. Soc. London 1904.
- Pheidole sinaitica laticeps* subsp. n., MAYR, p. 6, Jägerskiöld exp. No. 9; *P. minutula folicola* subsp. n., FOREL, p. 681, Zool. Jahrb. Syst. xx; *P. ursus* var. n. *gracilinoda*, FOREL, p. 172, Ann. Soc. ent. Belgique xlviii; *P. megacephala* subsp. n. *impressifrons* (*impressiceps*, p. 72, altered p. 110), WASMANN, Notes Leyden Mus. xxv.
- P. termitophila*, Soudan, FOREL, p. 13, Jägerskiöld exp. No. 13; *P. ceres*, Colorado, WHEELER, p. 10, Bull. Amer. Mus. xx; *P. severini*, Cayenne, FOREL, p. 171, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Plagiolepis brunni* var. n. *nilotica*, MAYR, p. 7, Jägerskiöld exp. No. 9.
- P. deweti*, Natal, FOREL, p. 423, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Podomyrma silvicola* var. n. *dimidiata*, FOREL, p. 170, t. c.
- Pogonomyrmex occidentalis*, æcological note, POPENOE, p. 360, Canad. Ent. xxxvi.
- Polyrhachis gracilis alata*, worker, FOREL, p. 177, Ann. Soc. ent. Belgique xlviii.
- P. menelas*, Simla, FOREL, p. 30, Rev. Suisse Zool. iii, **n. sp.**
- Ponera eduardi*, apterous male, FOREL, p. 421, Ann. Soc. ent. Belgique xlviii.
- Prenolepis jägerskiöldi*, Cairo, MAYR, p. 8, Jägerskiöld exp. No. 9; *P. tragaordhi*, Soudan, FOREL, p. 14, Jägerskiöld exp. No. 13 : **n. spp.**
- Procryptocerus hirsutus convexus* subsp. n., FOREL, p. 34, Rev. Suisse Zool. xii.
- Pseudomyrma*, Smith's species irrecognisable, p. 683, *P. dendroica emarginata* var. n. p. 684, *latinoda tachigaliae* subsp. n. p. 686, *caroli sapii* var. n. p. 688, *sericea* varr. n. *cordiae* and *longior*, p. 690, FOREL, Zool. Jahrb. Syst. xx; *P. latinoda* var. n. *nigrescens*, *P. arborissanctæ symbiotica*, p. 38, *P. kunkeli* var. n. *dichroua*, p. 41, FOREL, Rev. Suisse Zool. xii; *P. latinoda* var. n. *opacior*, FOREL, p. 170, Ann. Soc. ent. Belgique xlviii.
- P. triplaridis*, p. 684, *ulei*, p. 689, Amazons, FOREL, Zool. Jahrb. Syst. xx; *P. dendroica*, Amazons, FOREL, p. 40, Rev. Suisse Zool. xii : **n. spp.**
- Rhopalothrix procera* var. n. *ballioni*, FOREL, p. 175, Ann. Soc. ent. Belgique xlviii.
- Sima sahlbergi* var. n. *deplanata*, FOREL, p. 375, Annuaire Mus. St. Petersb. viii.
- Solenopsis texana catalinae*, subsp. n., WHEELER, p. 269, Bull. Amer. Mus. xx; *S. corticalis amazonensis* subsp. n., FOREL, p. 680, Zool. Jahrb. Syst. xx; *S. corticalis* var. n. *virgula*, *S. geminata pylades* subsp. n., FOREL, p. 172, Ann. Soc. ent. Belgique xlviii; *S. geminata*, ravages in Porto Rico, BARRETT, Bull. Dep. Agric. Jamaica ii, p. 204.
- S. moelleri*, Blumenau, p. 173, with var. *gracilior*, p. 174, FOREL, Ann. Soc. ent. Belgique xlviii, **n. sp.**

- Stenammas barbarus* var. n. *persicus*, FOREL, p. 175, t. c. ; *S. patrule bakeri* subsp. n., WHEELER, p. 270, Bull. Amer. Mus. xx.
- S. (Messor) bugnioni*, Biskra, FOREL, p. 13, Rev. Suisse Zool. xii, **n. sp.**
- Strongylognathus christophi* var. n. *rehbinderi*, a slave-making expedition, pp. 2-4, FOREL, t. c.
- Strumigenys membranifera* var. n. *santschii*, FOREL, p. 6, t. c.
- S. ludovici*, Madagascar, FOREL, p. 369, Annuaire Mus. St. Petersb. viii, **n. sp.**
- Symmyrmica* **n. g.** near *Formicoxenus*, p. 3, *S. chamberlini* **n. sp.**, Colorado, p. 5, WHEELER, Bull. Amer. Mus. xx.
- Sympheisole* **n. g.** p. 7, *S. elecebra* **n. sp.**, Colorado, p. 8, WHEELER, t. c.
- Tapinoma erraticum israelis* subsp. n., FOREL, p. 16, Rev. Suisse Zool. xii.
- T. wroughtonii*, N. India, FOREL, p. 26, t. c., *T. antarcticum*, Chile, FOREL, p. 17, t. c. : **n. spp.**
- Tetramorium cespitum* var. n. *splendens*, RUZSKY, p. 33, Protok. Kazan Univ. 1902, 1903, No. 6 ; *T. cespitum* var. n. *biskrensis*, FOREL, p. 13, t. c., *T. cespitum* var. n. *schmidtii*, FOREL, p. 15, t. c. ; *T. cespitum* var. n. *forte*, FOREL, p. 371, Annuaire Mus. St. Petersb. viii.
- T. elizabethæ*, Sind, FOREL, p. 20, Rev. Suisse Zool. xii, **n. sp.**
- Tomognathus sublevis*, habits, WELLENIUS, pp. 70-72, Medd. Soc. Faun. Fenn. 1902/1903.

CHRYSIDÆ.

[Cf. ASHMEAD (44), DU BUYSSON (217), DUCKE (412), GARCIA (585, 586), MOCSÁRY (952), NURSE (986), VIERECK (1447).]

Annotated list and table of genera and species of *Chrysid.* observed at Parà, DUCKE, pp. 13-48, Bull. Soc. ent. ital. xxxvi.

Chrysis succincta varr. n. *ignifacies* and *alicantina*, GARCIA, p. 86, Bol. Soc. espan. iv ; *C. acceptabilis*=(*thalia* Nurse), NURSE, p. 19, J. Bombay Soc. xvi ; *C. chlorochrysa*=(*subcærulea* Rad.=*hoggei* Nurse), NURSE, p. 21, t. c.

C. (Tetrachrysis) escaleraei, Akbès, p. 87, *C. (Hexachrysis) dusmeti*, Cairo, p. 88, GARCIA, Bol. Soc. espan. iv ; *C. (Holoachrysis) modesta*, p. 404, *auronitens*, *pleuralis*, p. 405, *C. (Tetrachrysis) cylindracea*, p. 406, *gazella*, p. 407, *chalcogaster*, p. 408, *eusoma*, p. 409, *cyanops*, p. 410, *callizona*, p. 411, *grata*, p. 412, S. Africa, MOCSÁRY, Ann. Mus. Hungar. ii ; *C. sara*, p. 20, *deposita*, p. 21, *urana*, *reparata*, p. 22, Quetta, NURSE, J. Bombay Soc. xvi ; *C. cecilia*, Java, p. 259, *ruppelli*, Abyssinia, *jheringi*, Brazil, p. 260, *tellinii*, *scabiosa*, E. Africa, p. 262, *districta*, W. Africa, p. 263, *goyasensis*, *myops*, p. 264, *ypirangensis*, p. 265, S. America, *alfkenella*, California, p. 266, *kathederi*, Turkey, p. 269, *rubropicta*, Abyssinia, p. 270, *alluaudi*, Madagascar, p. 272, BUYSSON, Rev. Ent. franc. 1904 : **n. spp.**

Chrysogona silvestrii, S. America, DUCKE, p. 32, Bull. Soc. ent. ital. xxxvi, **n. sp.**

Cleptes nigrata, Spain, GARCIA, p. 83, Bol. Soc. espan. iv, **n. sp.**

Cleptidea **n. g.** for *Cleptes aurora*, *mutilloides*, *fasciata*, *xanthomelæna*, MOCSÁRY, p. 567, Ann. Mus. Hungar. ii.

Ellampus hypocrita=(*timidus* Nurse), NURSE, p. 19, J. Bombay Soc. xvi.

Euchraides **n. g.** *oblatus* **n. sp.**, Quetta, NURSE, p. 23, t. c.

Hedychridium, table of Spanish, *H. minutum* var. n. *melanogaster*, p. 146, GARCIA MERCET, pp. 144-152, Bol. Soc. espan. iv.

H. auriventris, Spain, GARCIA, p. 85, t. c. ; *H. dubium*, Segovia, GARCIA MERCET, p. 147, t. c. ; *H. andreinii*, Erythraea, *moricei*, Zante, DU BUYSSON, p. 256, Rev. Ent. franc. 1904 ; *H. amatum*, p. 19, *rotundum*, p. 20, Deesa, NURSE, J. Bombay Soc. xvi : **n. spp.**

- Hedychrum alluaudi*, Madagascar, BUYSSON, p. 258, Rev. Ent. franc. 1905 ;
H. stantoni, Philippines, ASHMEAD, p. 283, Canad. Ent. xxxvi : **n. spp.**
Holopyga gloriosa var. *n. intermedia*, GARCIA, p. 85, Bol. Soc. espan. iv.
H. wagneriella, Argentina, DU BUYSSON, p. 255, Rev. Ent. franc. 1904,
n. sp.
Notozus violascens (= *kashmirensis* Nurse), NURSE, p. 19, J. Bombay Soc. xvi.
N. decorsei, Centr. Africa, DU BUYSSON, p. 253, Rev. Ent. franc. 1904, **n. sp.**
Parnopes oberthuri, Silvapoor, p. 273, *digueti*, Mexico, p. 274, BUYSSON,
 Rev. Ent. franc. 1904 ; *P. hageni*, p. 246, *henshawi*, p. 247, *concinna*,
diadema, p. 248, *taniata*, *arizonensis*, p. 249, *excurvata*, p. 250,
 N. America, VIERECK, Tr. Amer. ent. Soc. xxx : **n. spp.**
Spintharis bispinosa ♂, MOSCÁRY, p. 404, Ann. Mus. Hungar. ii.
Stilbum cyanurum, note, TULLGREN, p. 426, Arkiv Zool. i.

HYMENOPTERA PARASITICA.

- Guests in Italian galls, *Hymenoptera*, STEGAGNO, Marcellia iii, pp. 27-44,
 and 51-52.
 Parasites, list of, with hosts, JACOBS, p. 308, Ann. Soc. ent. Belgique xlviii.

ICHNEUMONIDÆ.

- [Cf. ASHMEAD (43, 45, 47, 48), BERTHOUMIEU (110-113), BRADLEY (164),
 BUGNION (198, 199), CAMERON (224-226, 230-233, 237, 239, 241),
 ENDERLEIN (465), FELT (495 A), FYLES (575), KOKUJEV (826-828),
 KRIEGER (845), ROMAN (1186, 1187), SCHMIEDEKNECHT (1231), STROBL
 (1350), SZÉPLIGETI (1366), VIERECK (1452).]
 The genera of the subfam. *Ichneumoninae* revised, and their species listed,
 BERTHOUMIEU, Wytsman Gen. Ins. fasc. xviii.
 STROBL concludes his Catalogue of the *Ichneumonidæ* of Styria, 1206 spp.
 of which 165 are new, Mt. Ver. Steiermark xl, pp. 43-160.
 The stalked eggs and oviposition of *Rhyssa*, BUGNION, Bull. Soc. Vaudoise
 xl, pp. 245-249, pl. xl, and Bull. Soc. ent. France 1904, pp. 80-83, cuts.
Acanthocryptus nigriceps ♀, STROBL, p. 148, Mt. Ver. Steiermark xl.
Aconias **n. g.** *Cryptini*, p. 345, *A. spinitarsis* **n. sp.**, Darjeeling, p. 346,
 CAMERON, Zeitschr. Hym. Dipt. iv.
Acronus saliformis, p. 67, *niger*, *auritus*, p. 68, Trop. Africa, ENDERLEIN,
 Zool. Anz. xxviii, **n. spp.**
Agrothereutes unifasciatus, *albicoris*, Manila, ASHMEAD, p. 142, P. U. S.
 Mus. xxviii, **n. spp.**
Algathia rufopetiolata, p. 222, *tibialis*, p. 223, *latibalteata*, p. 224, *rufipes*,
 p. 225, *erythropoda*, p. 226, *caripes*, p. 227, *rothneyi*, p. 228, *robusta*,
 p. 229, *flavobalteata*, p. 230, *femorata*, p. 231, *cariniscutis*, p. 232,
 Khasia hills, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
Allexetastes **subg. n.** cf. *Exetastes*.
Alystria **n. g.** p. 340, *A. curvilineata* **n. sp.**, p. 341, Darjeeling, CAMERON,
 Zeitschr. Hym. Dipt. iv.
Amblyteles chalybeatus, characters, ROMAN, p. 139, Ent. Tidskr. xxv.
A. styriacus, p. 144, *denticornis*, p. 146, Styria, STROBL, Mt. Ver. Steiermark
 xl ; *A. catagraphus*, Setschuan, KOKUJEV, p. 11, Rev. Russe ent. iv :
n. spp.
Amesolytus pictus, N. America, FYLES, p. 207, cut, Canad. Ent. xxxvi, **n. sp.**
Angitia anthrocostoma, p. 85, *laricinella* (= *nana* Rat. nec Gr.), p. 86,
norakii, p. 87, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
Anilasta rufocincta var. *n. maculipes*, STROBL, p. 90, t. c.
A. nigromaculata, p. 88, *calcanea*, p. 90, Styria, STROBL, t. c. **n. spp.**
Aniseres subalpinus, Admont, STROBL, p. 138, t. c. **n. sp.**

- Anisobas tschitscherini*, Transcaucasus, KOKUJEV, p. 199, Rev. Russe Ent. iv, **n. sp.**
- Anomalon debile*, *varitarsum*, distinguished, p. 173, *A. delarvatum* and *trochanteratum*, p. 174, KRIEGER, Zeitschr. Hym. Dipt. iv.
- Apæleticus brevicornis* ♀, *inclytus* ♀, BERTHOUMIEU, p. 14, Echange 1904.
- Aperileptus inamœnus*, var. ? *trivittatus* var. n., STROBL, p. 120, Mt. Ver. Steiermark xl.
- A. minimus*, p. 121, *rufus*, p. 122, *nigrovittatus*, p. 123, *nigricarpus*, p. 124, Styria, STROBL, t. c. **n. spp.**
- Astomaspis metathoracica*, Manila, ASHMEAD, p. 140, P. U. S. Mus. xxxviii, **n. sp.**
- Atrometus minutus*, Manila, ASHMEAD, p. 144, t. c. **n. sp.**
- Atrophæa clypearia*, Manila, ASHMEAD, p. 143, t. c. **n. sp.**
- Barichneumon heracleæ* ♂, MORLEY, p. 37, Ent. Mag. xl.
- Bassus pulchellus* var. n. *alpigena*, STROBL, p. 156, Mt. Ver. Steiermark xl.
- Bathrythrix striatus*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Blapticus xanthocephalus*, Admont, STROBL, p. 113, Mt. Ver. Steiermark xl, **n. sp.**
- Cænocryptus remex* Tschek, habits, = (*laticrus* Thoms.), PFANKUCH, p. 225, Zeitschr. Hym. Dipt. iv.
- Camarota madagascariensis*, Madagascar, SZÉPLIGETI, p. 336, Bull. Mus. Paris ix, **n. sp.**
- Campoplex polyxanthus*, p. 59, *rufiventris*, p. 61, *alpinus*, p. 621, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Casiniaria arvensis* ♀, STROBL, p. 71, t. c.
- C. cingulata*, Styria, STROBL, p. 68, t. c. **n. sp.**
- Catadelphus dusmeti*, Escorial, BERTHOUMIEU, p. 161, Bol. Soc. espan. iv, **n. sp.**
- Catomicrus alpigenus*, Styria, STROBL, p. 116, Mt. Ver. Steiermark xl, **n. sp.**
- Charops decipiens* var. n. *nigropetiolatus*, STROBL, p. 65, t. c.
- Cidaphurus flavomaculatus*, Simla, CAMERON, p. 346, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Cœlichneumon derasus* var. n. *pictus*, ROMAN, p. 115, Ent. Tidskr. xxv.
- Cœlojoppa* **n. g.**, p. 163, *C. cariniscutis* **n. sp.**, Darjeeling, p. 208, CAMERON, Entomologist 1904.
- Colpomera flava*, Philippines, ASHMEAD, p. 284, Canad. Ent. xxxvi, **n. sp.**
- Cratichneumon* (*Melanichneumon*) *cæsareus*, Siberia, ROMAN, p. 146, Ent. Tidskr. xxv; *C. rubicundus*, p. 106, *davisi*, p. 107, N. America, BRADLEY, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Cremastus dalmatinus*, Dalmatia, STROBL, p. 92, Mt. Ver. Steiermark xl, **n. sp.**
- Cryptus verticalis* Bingh. to *Agrothereutes*, *C. præpes* Bingh. to *Microcryptus*, ASHMEAD, p. 142, P. U. S. Mus. xxviii.
- C. capensis*, Cape Colony, CAMERON, p. 142, Rec. Albany Mus. i; *C. rufopetiolatus*, p. 105, *himalayensis*, *bibulus*, p. 106, Assam, CAMERON, Tr. ent. Soc. London 1904 : **n. spp.**
- Darpasus* **n. g.** *Amblypygi*, *D. pilosus* **n. sp.**, Himalaya, CAMERON, p. 344, Zeitschr. Hym. Dipt. iv.
- Darymna* **n. g.** p. 224, *D. pleuralis* **n. sp.**, Darjeeling, p. 337, CAMERON, t. c.
- Diatora prodeniæ*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Enicospilus*, the North American, FELT, pp. 107-113, Bull. New York Mus. lxxvi; *E. unicallosus* ♀, STROBL, p. 54, Mt. Ver. Steiermark xl.
- E. ashbyi*, Philippines, ASHMEAD, p. 17, J. N. York Ent. Soc. xii, **n. sp.**
- Entypoma rugosissimum*, Styria, STROBL, p. 114, Mt. Ver. Steiermark xl, **n. sp.**
- Ephialtes carbonarius*, metamorphosis, XAMBEU, p. 170, Ann. Soc. Linn. Lyon l.

- E. tschitscherini*, Ural, KOKUJEV, p. 200, Rev. Russe Ent. iv, **n. sp.**
Epiurus carpocapse, St Petersburg, ASHMEAD, p. 102, Canad. Ent. xxxvi, **n. sp.**
Eremotylus, the North American, FELT, Bull. New York Mus. lxxvi, pp. 101–107.
Eristicus iridipennis, Cape Colony, CAMERON, p. 142, Rec. Albany Mus. i, **n. sp.**
Etha lucteiventris, *khasiana*, Assam, CAMERON, p. 103, Tr. ent. Soc. London 1904, **n. sp.**
Euryproctus albopictus var. *n. alpina*, STROBL, p. 154, Mt. Ver. Steiermark xl.
Eusterinx hirticornis, Admont, STROBL, p. 117, t. c. **n. sp.**
Exetastes csikii var. *n. signata*, KOKUJEV, p. 108, Rev. Russe Ent. iv.
E. illyricus, Styria, STROBL, p. 45, Mt. Ver. Steiermark xl; *E. (Allexetastes* subg. *n.) komarovi*, p. 106, *coreanus*, p. 107, Corea, KOKUJEV, Rev. Russe Ent. iv : **n. spp.**
Exochus multicinctus, Admont, STROBL, p. 156, Mt. Ver. Steiermark xl, **n. sp.**
Fasula n. g. F. maculata n. sp., Himalaya, CAMERON, p. 338, Zeitschr. Hym. Dipt. iv.
Friona varipes, p. 107, *frontella*, p. 108, *curvicarinata*, p. 109, Assam, CAMERON, Tr. ent. Soc. London 1904, **n. spp.**
Gabunia Kriechb. = (*Nadia* Tosq.), KRIEGER, p. 172, Zeitschr. Hym. Dipt. iv.
Genophion n. g. gilletti, p. 123, *coloradensis*, p. 124, **n. spp.**, N. America, FELT, Bull. New York Mus. lxxvi.
Gotra fulvipes, Assam, CAMERON, p. 104, Tr. ent. Soc. London 1904, **n. sp.**
Habrocryptus granicheri, Wisconsin, VIERECK, p. 333, Ent. News Philad. xv, **n. sp.**
Hadrojoppa fumipennis, N. India, CAMERON, p. 278, Ann. Nat. Hist. xiii, **n. sp.**
Haliphera flavomaculata, Darjeeling, CAMERON, p. 306, Entomologist 1904, **n. sp.**
Hedyjoppa n. g. p. 219, *H. aurantacea n. sp.*, Darjeeling, p. 220, CAMERON, Zeitschr. Hym. Dipt. iv.
Helictes nigricoxus, Admont, STROBL, p. 139, Mt. Ver. Steiermark xl, **n. sp.**
Hellwigia obscura ♂, STROBL, p. 49, t. c.
Hemiteles geniculatus, p. 110, *pulcherrimus*, *ornatitarsis*, p. 111, Assam, CAMERON, Tr. ent. Soc. London 1904, **n. spp.**
Heterischnus hispanicus, Ciudad-Real, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904, **n. sp.**
Holomeristus minimus, Styria, STROBL, p. 119, Mt. Ver. Steiermark xl, **n. sp.**
Hoplisis laticinctus, metamorphosis, XAMBEU, p. 172, Ann. Soc. Linn. Lyon l.
Hybophorus piceus, Caucasus, BERTHOUMIEU, p. 13, Echange 1904, **n. sp.**
Ichneumon haglundii var. *n. guttatus*, *I. thomsoni* var. *n. connectens*, p. 142, *I. gravipes* var. *n. pictus*, *I. melanobatus* var. *n. obscurior*, p. 143, ROMAN, Ent. Tidskr. xxv; *I. amphibolus*, characters, *I. didymus* ♂, ROMAN, p. 116, t. c.; *I. cerebrosus* var. *n. picticornis*, KOKUJEV, p. 82, Rev. Russe Ent. iv.
I. ambifarius, *sabaudus*, Haute Savoie, *tenuidens*, Croatia, BERTHOUMIEU, Echange 1904; *I. lateritius*, *reconditus*, Spain, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904; *I. sibiricus*, p. 139, *fuscipictus*, p. 144, Jenissei, ROMAN, Ent. Tidskr. xxv; *I. assimilis*, p. 80, *jakolevi*, p. 81, *versatilis*, p. 82, *areolaris*, *ermak*, p. 83, Irkutsk, KOKUJEV, Rev. Russe Ent. iv; *I. potanini*, p. 12, *gansuanus*, p. 13, *chinensis*, p. 14, W. China, KOKUJEV, t. c.; *I. rubriornatus*, Cape Colony, CAMERON, p. 141, Rec. Albany Mus. i : **n. spp.**

- Ischnogaster cabrerai*, Teneriffe, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904, **n. sp.**
- Joppoides n. g. xanthomelas* Tosq., BERTHOUMIEU, p. 23, Gen. Ins. fasc. 18.
- Lægula n. g. p. 341, L. annulata n. sp.*, Himalaya, p. 342, CAMERON, Zeitschr. Hym. Dipt. iv.
- Lamprocryptus n. g. p. 414*, SCHMIEDEKNECHT, Opusc. Ent.
- Laphyctes*, synonymy, KRIEGER, pp. 173, 174, Zeitschr. Hym. Dipt. iv.
- Leptobatus ziegleri* ♂, STROBL, p. 47, Mt. Ver. Steiermark xl.
- L. multiguttatus*, Styria, STROBL, p. 48, t. c. **n. sp.**
- Leptopygus stangli*, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc. xii, **n. sp.**
- Limneria africana*, Grahamstown, CAMERON, p. 175, Rec. Albany Mus. i, **n. sp.**
- Lissonota fletcheri* var. n. *breviventris*, STROBL, p. 152, Mt. Ver. Steiermark xl.
- L. curvilineata, africana*, Cape Colony, CAMERON, p. 147, Rec. Albany Mus. i, **n. spp.**
- Lobocryptus n. g. p. 414*, SCHMIEDEKNECHT, Opusc. Ent.
- Lodryca n. g. L. lineaticeps n. sp.*, Darjeeling, CAMERON, p. 223, Zeitschr. Hym. Dipt. iv.
- Lynteria n. g. p. 220, L. violaceipennis n. sp.*, Himalaya, p. 221, CAMERON, t. c.
- Marpelites n. g. near Listrognathus*, p. 144, *L. ruficollis n. sp.*, Cape Colony, p. 145, CAMERON, Rec. Albany Mus. i.
- Matara* Himg. near *Cressonianus*, characters, BRÈTHES, p. 335, An. Mus. Buenos Aires xi.
- Megastylus hirticornis*, Admont, STROBL, p. 141, Mt. Ver. Steiermark xl, **n. sp.**
- Meloboris alpina*, Edmont, STROBL, p. 82, t. c. **n. sp.**
- Mesochorus leucogrammus* var. n. *nigrocoxatus*, STROBL, p. 103, t. c.; *M. confusus*, pl. v, figg. A, B, habits, p. 72, VAN ROSSUM, Tijdschr. Ent. xlvii.
- M. thomsoni* (= *nigriceps* Th. nec Br.), p. 103, *alpigenus*, p. 104, *jugicola*, p. 105, *macrocephalus*, p. 106, *longiceps*, p. 108, Styria, STROBL, Mt. Ver. Steiermark xl; *M. philippinensis*, Manila, ASHMEAD, p. 144, P. U. S. Mus. xxviii : **n. spp.**
- Mesoleius flavipes* ♀, STROBL, p. 153, Mt. Ver. Steiermark xl.
- Mesostenoides octozonatus*, Manila, ASHMEAD, p. 143, P. U. S. Mus. xxviii; *M. philippinensis*, Manila, ASHMEAD, p. 17, J. N. York Ent. Soc. xii : **n. spp.**
- Mesostenopsis n. g.*, SCHMIEDEKNECHT, p. 561, Opusc. Ent.
- Mesostenus oneili*, Cape Colony, CAMERON, p. 143, Rec. Albany Mus. i; *M. respondens*, p. 112, *brahminus*, p. 113, *missippus*, p. 114, *clarinervis*, p. 115, *reticulatus, caligatus*, p. 116, *salutator*, p. 117, *versatilis*, p. 118, *maculiceps*, p. 119, Assam, CAMERON, Tr. ent. Soc. London 1904 : **n. spp.**
- Metopius erythropus*, Cape Colony, CAMERON, p. 148, Rec. Albany Mus. i, **n. sp.**
- Neomesostenus n. g.*, SCHMIEDEKNECHT, p. 562, Opusc. Ent.
- Neotypus cabrerai*, Teneriffe, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904, **n. sp.**
- Nepiesta jugicola*, p. 75, *rufocincta*, p. 76, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Ogulnia n. g. near Haliphera, O. fuscitarsis n. sp.*, Darjeeling, CAMERON, p. 343, Zeitschr. Hym. Dipt. iv.
- Ophion abnormum*, Colorado, p. 121, *ferruginipennis*, p. 122, N. America, FELT, Bull. N. York Mus. lxxvi, **n. spp.**

- Olesicampa nigricornis*, Styria, STROBL, p. 81, Mt. Ver. Steiermark xl, **n. sp.**
- Omorga dispar* ♂, STROBL, p. 79, t. c.
- Oneilella* **n. g.** for *Cryptus formosus* Br., p. 190, its host *Anaphe reticulata*, p. 191, CAMERON, Zeitschr. Hym. Dipt. iv.
- Opheltes glaucopterus*, habits, VAN ROSSUM, p. 71, Tijdschr. Ent. xlvii.
- Ophion costatus* ♂, STROBL, p. 52, Mt. Ver. Steiermark xl.
- O. frontalis*, Styria, STROBL, p. 53, t. c. **n. sp.**
- Ophiononeura* **n. g.** near *Ophionopterus*, p. 174, *O. flavomaculata* **n. sp.**, S. Africa, p. 175, CAMERON, Rec. Albany Mus. i.
- Otacustes albocannulus*, Manila, ASHMEAD, p. 140, P. U. S. Mus. xxviii, **n. sp.**
- Pantisarthurus pseudochropus, rudepunctatus*, Styria, STROBL, p. 137, Mt. Ver. Steiermark xl, **n. spp.**
- Parabatus nigricarpus* var. *n. semifuscus*, STROBL, p. 50, t. c.
- Paraphylax fasciatiptennis*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Phæogenes compar, tristis, tenuicornis*, p. 14, *subniger*, p. 15, Hte. Savoie, BERTHOUMIEU, Echange xx; *P. nigellus*, Spain, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904 : **n. spp.**
- Phygadeuon latianulatum*, p. 119, *striatifrons*, p. 120, *labiale*, *pallidinervis*, p. 121, Assam, CAMERON, Tr. ent. Soc. London 1904, **n. sp.**
- Pimpla diluta* to *Epiurus*, ASHMEAD, p. 102, Canad. Ent. xxxvi.
- P. shawi*, p. 145, *spiloaspis*, p. 146, Cape Colony, CAMERON, Rec. Albany Mus. i, **n. spp.**
- Platylabus calidus*, Spain, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904; *P. parvulus*, Spain, *pimplarius*, Switzerland, p. 13, *tricolor*, Savoy, p. 14, BERTHOUMIEU, Echange 1904 : **n. spp.**
- Plectiscus quadrierosus*, p. 125, *tenuecinctus*, p. 126, *grossepunctatus*, p. 127, *pseudoproximus*, p. 128, *posticus, petiolifer*, p. 130, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Porizon erythrurus*, Admont, STROBL, p. 97, t. c. **n. sp.**
- Pristomerus schreineri*, St. Petersburg, ASHMEAD, p. 101, Canad. Ent. xxxvi; *P. flavus*, Manila, ASHMEAD, p. 145, P. U. S. Mus. xxviii : **n. spp.**
- Proclitus fulvocingulatus*, Styria, STROBL, p. 134, Mt. Ver. Steiermark xl, **n. sp.**
- Protocryptus* **n. g.** p. 414, SCHMIEDEKNECHT, Opusc. Ent.
- Pyraemon xoridoideus*, p. 72, *aterrimus*, p. 74, Admont, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Rhyssa persuasoria*, eggs, ovaries, see at head.
- Seleucus exareolatus*, Admont, STROBL, p. 109, Mt. Ver. Steiermark xl, **n. sp.**
- Shalisha* **n. g.** p. 221, *S. fulvipes* **n. sp.**, Darjeeling, p. 222, CAMERON, Zeitschr. Hym. Dipt. iv.
- Spilocryptus frey-gressneri*, Sierre, p. 526, *subalpinus*, Altvater, p. 528, SCHMIEDEKNECHT, Opusc. Ent., **n. spp.**
- Spilopoppa* **n. g.** p. 208, *S. fulvipes* **n. sp.**, Darjiling, p. 209, CAMERON, Entomologist 1904.
- Spilopimpla* **n. g.** p. 143, *S. rufithorax* **n. sp.**, Dunbrody, p. 144, CAMERON, Zeitschr. Hym. Dipt. iv.
- Spinolia schiefereri*, Styria, STROBL, p. 149, Mt. Ver. Steiermark xl, **n. sp.**
- Stylocryptus transverseareolatus* var. *nigripes*, STROBL, p. 149, t. c.
- Suralta annulipes*, p. 220, *pallidinerva*, p. 221, Khasia hills, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
- Symplesis defectiva*, Styria, STROBL, p. 112, Mt. Ver. Steiermark xl, **n. sp.**
- Synechoeruptus* **n. g.** *oraniensis* **n. sp.**, Algeria, SCHMIEDEKNECHT, p. 427, Opusc. Ent.
- Tanyopoppa* **n. g.** p. 217, *T. sanguineoplagiata* **n. sp.**, Himalaya, p. 218, CAMERON, Zeitschr. Hym. Dipt. iv.

- Temelucha plutellæ*, St. Petersburg, ASHMEAD, p. 101, Canad. Ent. xxxvi ;
T. philippinensis, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc.
 xii : **n. spp.**
- Thascia n. g. T. pilosa n. sp.*, Darjeeling, CAMERON, p. 339, Zeitschr.
 Hym. Dipt. iv.
- Thersilochus platyurus*, p. 99, *styriacus*, p. 100, Styria, *punctatissimus*, hab. ?,
 p. 102, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Thymaris pulchricornis* var. *n. breviventris*, STROBL, p. 109, t. c.
- T. slingerlandana*, N. York from *Polychrosis*, ASHMEAD, p. 333, cut, Canad.
 Ent. xxxvi, and Slingerland, t. c. p. 344.
- Trachynotus foliatus* var. *n. nigerrimus*, STROBL, p. 55, Mt. Ver. Steier-
 mark xl.
- Trichomma clavipes*, New Guinea, p. 166, *intermedia*, Saxony, p. 168,
 KRIEGER, Zeitschr. Hym. Dipt. iv, **n. spp.**
- Triptognathus n. g.* near *Fileanta* Cam., BERTHOUMIEU, p. 49, Gen. Ins.
 xviii.
- Trogus (Tricyphus) violaceus*, Mexico, SZÉPLIGETI, p. 336, Bull. Mus. Paris
 ix, **n. sp.**
- Tropistes*, taxonomy and components, ROMAN, pp. 214–217, Zeitschr.
 Hym. Dipt. iv.
- Umlina flexilis*, Assam, CAMERON, p. 107, Tr. ent. Soc. London 1904,
n. sp.
- Xylonomus sepulchralis* and *depressus* to *Sichelia*, KOKUJEV, p. 298, Rev.
 Russe Ent. 1904.

BRACONIDÆ (incl. ALYSIIDÆ).

- [Cf. ASHMEAD (44, 47, 48, 50, 51), BRÈTHES (175, 177), CAMERON (222, 223,
 224, 225, 231, 234), ENDERLEIN (456), FROGGATT (562), GIARD (599),
 HÖPPNER (705), MANTERO (902–904), SZÉPLIGETI (959, 1365–1367).]
- The genera of *Braconidæ*, with lists of species, SZÉPLIGETI, Wytsman's
 Gen. Ins. fasce. xxii and xxiii, 253 pp., 3 pls.
- Acanthobracon nigromaculata*, Cape Colony, CAMERON, p. 155, Rec. Albany
 Mus. i, **n. sp.**
- Agathis rufoplagiata*, Sikkim, CAMERON, p. 5, Zeitschr. Hym. Dipt. iv ;
A. caudata, Peru, SZÉPLIGETI, p. 195, Ann. Mus. Hungar. ii : **n. spp.**
- Apanteles basimacula, maculitarsis*, Grahamstown, CAMERON, p. 173, Rec.
 Albany Mus. i ; *A. philippinensis, manilæ*, Philippines, ASHMEAD,
 p. 19, J. N. York Ent. Soc. xii : **n. spp.**
- Aspilota ceylonica*, Peradeniya, ASHMEAD, p. 113, Ent. News Philad. xv,
n. sp.
- Bracon bicolor* Br. to *Iphiaulax*, CAMERON, p. 1554, Rec. Albany Mus. i ;
B. tschitscherini, Transcaspian, KOKUJEV, p. 213, Rev. Russe Ent. iv ;
B. teius, Ternate, p. 122, *spilogaster*, hab. ?, p. 123, CAMERON, J. Straits
 Asiat. Soc. xli ; *B. ricinicola*, Manila, ASHMEAD, p. 148, P. U. S. Mus.
 xxviii ; *B. semialbus*, p. 182, *antennalis, peruvianus, marcapatensis,*
americanus, bimaculatus, p. 183, *binotatus, enotatus, atriceps*, Peru,
paraguayensis, Paraguay, p. 184, *sicuanensis, circuminctus*, Peru,
aricensis, Chile, p. 185, SZÉPLIGETI, Ann. Mus. Hungar. ii : **n. spp.**
- Braunsia*, revised, definition amended, synonymy, ENDERLEIN, pp. 429–452,
 Zool. Jahrb. Syst. xx.
- B. germanica*, Pomerania, *fuscipennis*, p. 436, *congoensis*, p. 437, *occidentalis*,
 p. 438, with var. *obscurior, reicherti*, p. 439, *erlangeri*, p. 442, *kriegeri*,
 p. 444, *ochracea*, p. 445, *subsulcata, melanura*, p. 446, Africa, *kriech-*
baumeri, Lombok, p. 447, *bimaculata*, Java, p. 448, *fasciata*, Lombok,
 p. 449, *cariosa*, Ceylon, p. 450, ENDERLEIN, Zool. Jahrb. Syst. xx,
n. spp.

- Brulleia* **n. g.** *melanocephala* **n. sp.**, N. Guinea, SZÉPLIGETI, p. 150, Braconidæ.
- Cardiochiles eremita*, Transcaspian, KOKUJEV, p. 215, Rev. Russe Ent. iv, **n. sp.**
- Cenocelcius peruanus*, Peru, SZÉPLIGETI, p. 196, Ann. Mus. Hungar. ii, **n. sp.**
- Cervellus* **n. n.** to replace *Cervulus* below, SZÉPLIGETI, p. 253, Braconidæ.
- Cervulus* **n. g.** *denticornis* **n. sp.**, Peru, SZÉPLIGETI, p. 20, Braconidæ.
- Chelonus robertianus*, S. Africa, CAMERON, p. 110, Rec. Albany Mus. i ;
C. semihyalinus, Manila, ASHMEAD, p. 146, P. U. S. Mus. xxviii ;
C. sobrinus, Peru, SZÉPLIGETI, p. 194, Ann. Mus. Hungar. ii : **n. spp.**
- Cremnops collaris*, Manila, ASHMEAD, p. 146, P. U. S. Mus. xxviii, **n. sp.**
- Curriea fasciatipennis*, Liberia, ASHMEAD, p. 18, cut, Ent. News Philad. xv.
- Cystomastax* **n. g.** *macrocentroides* **n. sp.**, Peru, SZÉPLIGETI, p. 81, Braconidæ.
- Dacnusa rondanii*, Argenteuil, GIARD, p. 181, Bull. Soc. ent. France 1904, **n. sp.**
- Ephedrus persicæ*, Australia, FROGGATT, p. 611, Agric. Gaz. N. S. W. xv, **n. sp.**
- Euagathis pulcher*, Peru, SZÉPLIGETI, p. 195, Ann. Mus. Hungar. ii, **n. sp.**
- Eurytenes nanus*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii, **n. sp.**
- Euscelinus manilæ*, Philippines, ASHMEAD, p. 145, t. c. **n. sp.**
- Euvipio* **n. g.** p. 14, *E. rufa* **n. sp.**, W. Africa, p. 15, SZÉPLIGETI, Braconidæ.
- Exotheus tibialis*, Cape Colony, CAMERON, p. 156, Rec. Albany Mus. i ;
E. spilopterus, p. 166, *capensis*, *canaliculatus*, p. 167, S. Africa, CAMERON, t. c. : **n. spp.**
- Exyra* spp. habits, metamorphosis, JONES, p. 16, pl. iii, Ent. News Philad. xv.
- Fænomorpha* **n. g.** p. 8, *F. bicolor* **n. sp.**, Peru, p. 9, SZÉPLIGETI, Braconidæ.
- Glyptapanteles manilæ*, Philippines, ASHMEAD, p. 147, P. U. S. Mus. xxviii, **n. sp.**
- Iphicrux trægardhi*, White Nile, SZÉPLIGETI, p. 10, Jägerskiöld exp. No. 14 ; *I. capensis*, p. 149, *basimacula*, p. 150, *clanes*, *rubrilineatus*, p. 151, *rubrinervis*, p. 152, *æthiopicus*, p. 153, *odontoscapus*, 12-*fasciatus*, p. 154, Cape Colony, CAMERON, Rec. Albany Mus. i ; *I. soleæ*, p. 164, *whitei*, *pilonotus*, p. 165, S. Africa, CAMERON, t. c. ; *I. baeri*, Peru, SZÉPLIGETI, p. 337, Bull. Mus. Paris ix ; *I. tornowii*, Tucuman, BRÈTHES, p. 334, An. Mus. Buenos Aires xi ; *I. transiens*, *rugulosus*, p. 173, *sicuanensis*, *carpalis*, p. 174, *levigatus*, *ignavus*, p. 175, *apricans*, *peregrinus*, *sculptilis*, *transversalis*, p. 176, *simillimus*, *dubiosus*, Peru, *mercedesiensis*, Argentina, p. 177, *macellus*, *persimilis*, *costatus*, *longulus*, *elegantulus*, Peru, *boliviensis*, Bolivia, p. 178, *luctuosus*, *braconiformis*, p. 179, *braconius*, *pseudobracon*, *paraguayensis*, *latus*, *aptus*, p. 188, *apricans*, *simplex*, Peru, *macretus*, Brazil, p. 181, *pernix*, *agilis*, p. 182, Peru, SZÉPLIGETI, Ann. Mus. Hungar. ii : **n. spp.**
- Ischiogonus philippinensis*, Manila, ASHMEAD, p. 285, Canad. Ent. xxxvi, **n. sp.**
- Ischnopus* **n. g.** *Alysiidæ*, p. 450, *I. bituberculatus* **n. sp.**, Tuscany, p. 451, MARSHALL, Ann. Mus. Genova xli.
- Lisitheria* **n. g.** *Agathidinae*, *L. nigricornis* **n. sp.**, India, CAMERON, p. 306, Entomologist 1904.
- Macrocentrus philippinensis*, Manila, ASHMEAD, p. 145, P. U. S. Mus. xxviii, **n. sp.**
- Macrostomion peruvianum*, Peru, SZÉPLIGETI, p. 193, Ann. Mus. Hungar. ii, **n. sp.**
- Megacentrus* **n. g.** p. 145, *concolor* **n. sp.**, Kilimanjaro, p. 146, SZÉPLIGETI, Braconidæ.
- Megalomum flavomaculatum*, Cape Colony, CAMERON, p. 157, Rec. Albany Mus. i, **n. sp.**

- Megaproctus fumipennis, fuscipennis*, p. 191, Peru, *xanthostigma*, Paraguay, *bifasciatus, affinis*, p. 192, *bicolor*, p. 193, Peru, SZÉPLIGETI, Ann. Mus. Hungar. ii, **n. spp.**
- Megarhogas n. g.* p. 83, *longipes, minor n. spp.*, Celebes, p. 84, SZÉPLIGETI, Braconidæ.
- Mesoagathis n. g. M. fuscipennis n. sp.*, Grahamstown, CAMERON, p. 172, Rec. Albany Mus. i.
- Meteorus bacoorensis*, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc. xii; *M. eumenidis*, Argentina, BRÈTHES, p. 53, An. Mus. Buenos Aires (3) ii: **n. spp.**
- Microcentrus n. g. Dyscoletes similis*, SZÉPLIGETI, p. 155, Braconidæ.
- Microdus bipustulatus*, Cape Colony, CAMERON, p. 158, Rec. Albany Mus. i, **n. sp.**
- Microplitis manila, philippinensis*, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. spp.**
- Monarea n. g. Osmophila fuscipennis*, SZÉPLIGETI, p. 68, Braconidæ.
- Monolexia manilensis*, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. sp.**
- Neorhyssa partiti*, p. 187, *ruficeps*, p. 188, Brazil, SZÉPLIGETI, Ann. Mus. Hungar. ii, **n. spp.**
- Opius pedestris*, Peru, SZÉPLIGETI, p. 196, t. c.; *O. philippinensis*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii: **n. spp.**
- Phenocarpa (Idiolexis) coxalis*, Peru, SZÉPLIGETI, p. 197, Ann. Mus. Hungar. ii, **n. sp.**
- Phanerotoma philippinensis*, Bacoar, ASHMEAD, p. 19, J. N. York Ent. Soc. xii, **n. sp.**
- Pseudobracon n. g.* p. 48, *africanus n. sp.*, Sierra Leone, p. 49, SZÉPLIGETI, Braconidæ.
- Rhogas ruspolii*, p. 413, *citernii*, p. 414, *scioensis*, p. 415, E. Africa, MANTERO, Ann. Mus. Genova xli; *R. fuscipennis, affinis*, Peru, SZÉPLIGETI, p. 194, Ann. Mus. Hungar. ii: **n. spp.**
- Schlettereriella n. g. Stenophasmus oncophorus* Sch., SZÉPLIGETI, p. 54, Braconidæ.
- Schonlandella n. g.* p. 169, position doubtful, *S. nigromaculata*, p. 170, *trimaculata, nigricollis*, p. 171, **n. spp.**, S. Africa, CAMERON, Rec. Albany Mus. i.
- Spathius philippinensis*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii, **n. sp.**
- Stantonia n. g. Microdini*, p. 146, *S. flava n. sp.*, Manila, p. 147, ASHMEAD, t. c.
- Trichiobracon rufus*, p. 168, *maculifrons*, p. 169, S. Africa, CAMERON, Rec. Albany Mus. i, **n. spp.**
- Urogaster philippinensis*, p. 19, *stantoni*, p. 20, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. spp.**
- Vipio (Pseudovipio) turcomanicus*, Transcaspien, p. 213, *xanthostigma*, W. Siberia, p. 214, KOKUJEV, Rev. Russe ent. iv, **n. spp.**
- Westwoodiella n. g. bicolor n. sp.*, W. Australia, SZÉPLIGETI, p. 155, Braconidæ.
- Xanthomicrodus n. g.* near *Crassomicrodus*, p. 157, *X. iridipennis n. sp.*, Cape Colony, p. 158, CAMERON, Rec. Albany Mus. i.

EVANIIDÆ.

[Cf. ASHMEAD (47), CAMERON (224, 240), HÖPPNER (705), KIEFFER (793).]

Aulacinus costulatus, Brazil, KIEFFER, p. 561, Arkiv Zool. i, **n. sp.**

Aulacus erythrogaster, Nevada, KIEFFER, p. 561, t. c. **n. sp.**

Evania striatifrons, versicolor, p. 543, with var. *erythrogaster*, p. 544,

- quinquelineata*, p. 544, *villosicrus*, Australia, *ferruginea*, Mexico, p. 545, *multicolor*, Java, p. 546, *levigena*, Caffraria, p. 547, *longitarsis*, p. 548, *brevigena*, p. 549, Brazil, *incerta*, S. France, p. 550, KIEFFER, t. c.; *E. annulipes*, Manila, ASHMEAD, p. 139, P. U. S. Mus. xxviii : n. spp.
- Gasteruption krieckbaumeri* var. n. *striaticeps*, KIEFFER, p. 551, Arkiv Zool. i; *G. assectator*, natural history, HÖPPNER, pp. 97–103, Allg. Zeitschr. Ent. ix.
- G. cultrigerum*, p. 552, *sanguineum*, *sjostedti*, p. 553, Cape Good Hope, *lativalva*, Australia, p. 554, *fulvivagina*, Caffraria, p. 555, *micrura* with var. *nigripectus*, *intricatum*, N. America, p. 556, *trifossulatum*, Egypt, p. 557, *leucopus*, Java, *nigromaculatum*, hab.?, p. 558, KIEFFER, Arkiv Zool. i; *G. dunbrodyense*, Cape Colony, CAMERON, p. 159, Rec. Albany Mus. i, n. spp.
- Hyptia argenteiceps*, hab.?, p. 540, *brevicalcar*, Wisconsin, p. 541, *rufosignata*, Buenos Ayres, p. 543, KIEFFER, Arkiv Zool. i, n. spp.
- Pristaulacus flavoguttatus*, Australia, CAMERON, p. 191, Zeitschr. Hym. Dipt. iv; *P. flavipes*, Illinois, p. 559, *muticus*, hab.?, p. 560, KIEFFER, Arkiv Zool. i : n. spp.

STEPHANIDÆ.

- Megischus ruficeps*, Saigon, pl. xii, fig. 5, p. 201, *borneensis*, Borneo, p. 202, SAUSSURE, Mission Pavie iii, n. spp.

CHALCIDIDÆ.

- [Cf. ASHMEAD (41, 46, 47, 48, 52, 53), CAMERON (223, 230), EMBLETON (450), FYLES (574), HÖPPNER (705), KIEFFER (796), MARCHAL (906, 907), MAYR (928), VASSILIEV (1433).]

ASHMEAD classifies the *Chalcidoidea*, adopting 14 families, tabulating the genera; he also catalogues the S. American forms and describes many new: Mem. Carnegie Mus. i, No. 4, pp. 225–551. For brevity, and as the work will be chiefly used separately, we have cited it below as ASHMEAD, Chalcid.

Bibliography of genera of *Chalcididæ*, ASHMEAD, pp. 365–393, Chalcid.

Anatomy and metamorphosis of *Comys infelix*, eggs, EMBLETON, Tr. Linn. Soc. London (2) ix, pp. 231–254, pls. xi, xii.

Remarkable development of *Ageniaspis fuscicollis*, MARCHAL, Arch. Zool. exp. xxxii, pp. 259–299.

Acanthometopon n. g. type *A. claricornis* Ashm., ASHMEAD, Chalcid. p. 314, *A. claricorne*, Brazil, pl. xxxviii, fig. 3, p. 498, id. n. sp.

Acroclisis coccidivora, Japan, ASHMEAD, p. 158, J. N. York Ent. Soc. xii, n. sp.

Acroclisis brasiliensis, Chapada, ASHMEAD, Chalcid. p. 502, n. sp.

Allochalcis n. g. p. 256, *A. nervosa* n. sp., Madagascar, p. 257, KIEFFER, Berlin. ent. Zeitschr. xlix.

Alloderma n. g. type *A. maculipennis*, Ashm., ASHMEAD, Chalcid. p. 273.

Alophomyia n. n. for *Alophus* Ashm., ASHMEAD, p. 126, P. ent. Soc. Washington vi.

Alophus n. g. type *A. flavus* Ashm., ASHMEAD, Chalcid. p. 353, *A. brasiliensis*, Brazil, p. 520, id. n. sp.

Ametallon n. g. type *A. chapadæ* Ashm., ASHMEAD, Chalcid. p. 344, *A. chapadæ*, Brazil, p. 511, id. n. sp.

Anacryptus japonicus, p. 147, *koebeleri*, p. 148, Japan, ASHMEAD, J. N. York Ent. Soc. xii, n. sp.

Anastatus japonicus, *gastropachæ*, p. 153, *brevipennis*, *albitarsis*, p. 154,

- Japan, ASHMEAD, J. N. York Ent. Soc. xii, *A. stantoni*, Philippines, ASHMEAD, p. 14, t. c.; *A. auriceps*, p. 493, *coreophagus*, *pleuralis*, *basalis*, *punctiventris*, p. 494, *unifasciatus*, p. 495, Brazil, ASHMEAD, Chalcid. : **n. spp.**
- Anthrocephalus punctatus*, Madagascar, p. 253, *rufipes*, Nossi-Bé, p. 254, KIEFFER, Berlin. ent. Zeitschr. xlix, **n. spp.**
- Aphelinus japonicus*, Atami, ASHMEAD, p. 161, J. N. York Ent. Soc. xii, **n. sp.**
- Aphidencyrus pallidipes*, Philippines, ASHMEAD, p. 15, t. c.; *A. brasiliensis*, Chapada, ASHMEAD, Chalcid. p. 497 : **n. spp.**
- Aphobetoideus* **n. g.** type *A. comperei* Ashm., ASHMEAD, Chalcid. p. 328.
- Aphycus albopleuralis*, Japan, ASHMEAD, p. 155, J. N. York Ent. Soc. xii, **n. sp.**
- Apocryptophagus* **n. g.** type *Chalcis explorator* Coq., ASHMEAD, Chalcid. p. 238.
- Ardalus howardii*, Brazil, ASHMEAD, Chalcid. p. 517, **n. sp.**
- Arretocera stantoni*, Manila, ASHMEAD, p. 136, P. U. S. Mus. xxviii, **n. sp.**
- Asecodes elasmii*, Manila, ASHMEAD, p. 138, t. c. **n. sp.**
- Aspidiotiphagus aleyrodii*, Manila, ASHMEAD, p. 139, t. c. **n. sp.**
- Axima koebelei*, *brasiliensis*, *brevicornis*, Brazil, ASHMEAD, Chalcid. p. 459, **n. spp.**
- Aximogastra* **n. g.** type *A. bahiæ* Ashm., ASHMEAD, Chalcid. p. 261, *A. bahiæ*, Brazil, p. 463, pl. xxxiii, fig. 5, id. **n. sp.**
- Aximopsis* **n. g.**, ASHMEAD, Chalcid. p. 259, *A. morio*, pl. xxxii, fig. 6, p. 460, Brazil, ASHMEAD, t. c. **n. sp.**
- Bephrata striatipes*, Brazil, p. 462, pl. xxxiii, fig. 4, ASHMEAD, t. c. **n. sp.**
- Blatticida* **n. g.** type *B. pulchra* Ashm., ASHMEAD, t. c. p. 305.
- Bothriothorax brasiliensis*, Chapada, ASHMEAD, t. c. p. 496, **n. sp.**
- Brachista* Walk. not valid, MAYR, p. 591, Verh. Ges. Wien liv.
- Brachycaudonia* **n. g.** type *B. californica* Ashm., ASHMEAD, Chalcid. p. 283.
- Brachystira pungens* (Förster), Germany, MAYR, p. 590, Verh. Ges. Wien liv, **n. sp.**
- Brasema fuscipennis*, Brazil, ASHMEAD, Chalcid. p. 486, **n. sp.**
- Bruchobius* **n. g.** type *B. laticeps* Ashm., ASHMEAD, t. c. p. 314.
- Bruchophagus funebris*, natural history, TITUS, pp. 77-83, Bull. U. S. Dep. Agric. Ent. xlv.
- Callismicra* **n. g.** p. 247, *C. flavocincta* **n. sp.**, Madagascar, p. 248, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Calosoter albitarsis*, Japan, ASHMEAD, p. 153, J. N. York Ent. Soc. xii, **n. sp.**
- Cecidoxenus* **n. g.** type *C. nigrocyanus* Ashm., ASHMEAD, Chalcid. p. 274.
- Cerapteroceroides* **n. g.** near *Cerapterocerus*, *C. japonicus* **n. sp.**, Atami, ASHMEAD, p. 156, J. N. York Ent. Soc. xii.
- Ceratasmicra* **n. g.** type *C. petiolata* Ashm., ASHMEAD, Chalcid. p. 251.
- Chalcedectes annulipes*, Brazil, pl. xxxvi, fig. 2, p. 483, ASHMEAD, t. c. **n. sp.**
- Chalcis flavitarsis*, Madagascar, *tenuicornis*, Nossi-Bé, p. 260, *multicolor*, Madagascar, p. 261, *saussurei*, *rufiventris*, Nossi-Bé, p. 262, *ferox*, p. 263, Nossi-Bé and Bourbon, with var. *coxalis*, p. 264, KIEFFER, Berlin. ent. Zeitschr. xlix; *C. prodeniæ*, Manila, ASHMEAD, p. 136, P. U. S. Mus. xxviii; *C. albotibialis*, *argentifrons*, Philippines, ASHMEAD, J. N. York Ent. Soc. xii : **n. spp.**
- Cheiloneurus japonicus*, Gifu, ASHMEAD, p. 156, J. N. York Ent. Soc. xii, **n. sp.**
- Chryseida æneiventris*, Brazil, p. 462, pl. xxxiii, fig. 3, ASHMEAD, Chalcid. **n. sp.**
- Chrysoatomus* **n. g.** type *C. zealandicus* Ashm., ASHMEAD, t. c. p. 342.
- Chrysonotomyia* **n. g.** type *Eulophus auropunctatus* Ashm., ASHMEAD, t. c. p. 344.

- Cirrospiloideus* **n. g.** type *Miotropis platynotæ* How., ASHMEAD, t. c. p. 354.
Closterocerus brownii, Manila, ASHMEAD, p. 138, P. U. S. Mus. xxviii, **n. sp.**
Coccidencyrus manilæ, Philippines, ASHMEAD, p. 14, J. N. York Ent. Soc. xii, **n. sp.**
Cælochalcis **n. g.** near *Halticella*, *C. carinifrons* **n. sp.**, Sikkim, p. 111, CAMERON, Entomologist 1904.
Copidosoma japonicum, Gifu, ASHMEAD, p. 154, J. N. York Ent. Soc. xii, **n. sp.**
Cryptoprymnus japonicus, Japan, ASHMEAD, p. 159, t. c. **n. sp.**
Decatoma atamiensis, Japan, ASHMEAD, p. 151, t. c. **n. sp.**
Decatomo thorax **n. g.** type *D. gallicola* Ashm., ASHMEAD, Chalcid. p. 273.
Derostenus bifoveolatus, *navai*, p. 160, *mitsukurii*, p. 161, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. spp.**
Dialomorpha **n. g.** type *D. australiensis* Ashm., ASHMEAD, Chalcid. p. 356.
Diaulus **n. g.** type *D. begini* Ashm., ASHMEAD, t. c. p. 356.
Dicelothorax platycerus, Santarem, pl. xxxv, fig. 3, p. 470, ASHMEAD, t. c. **n. sp.**
Diglyphomorpha **n. g.** type *Diglyphus maculipennis* Ashm., ASHMEAD, t. c. p. 352.
Dimmockia **n. g.** type *Eulophus incongruus* Ashm., ASHMEAD, t. c. p. 357.
Eisenia **n. g.** type *E. mexicana* Ashm., ASHMEAD, t. c. p. 233.
E. flaviscapa, Pará, ASHMEAD, t. c. p. 394, **n. sp.**
Elachertomorpha **n. g.** type *E. flaviceps* Ashm., ASHMEAD, t. c. p. 352.
E. flaviceps, Brazil, p. 518, ASHMEAD, t. c. **n. sp.**
Elachertus atamiensis, *basilaris*, Japan, ASHMEAD, p. 164, J. N. York Ent. Soc. xii, **n. spp.**
Elasmus atamiensis, *hakonensis*, p. 159, *japonicus*, p. 160, Japan, ASHMEAD, t. c.; *E. philippinensis*, Manila, ASHMEAD, p. 138, P. U. S. Mus. xxviii; *E. brasiliensis*, p. 502, *peraffinis*, *chapadæ*, p. 503, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Encyrtaspis **n. g.** type *E. brasiliensis* Ashm., ASHMEAD, Chalcid. p. 290, *E. braziliensis*, Pernambuco, pl. xxxvii, fig. 4, p. 492, id. **n. sp.**
Encyrtus telenomicida, Charkov, on *Telenomus*. VASSILIEV, p. 117, Rev. Russe Ent. iv, **n. sp.**
Enneasmicra **n. g.** type *Smicra erinamius* Walk., ASHMEAD, Chalcid. p. 252, *E. incerta*, Brazil, ASHMEAD, p. 449, t. c. **n. sp.**
Epipteromalus **n. g.** type *E. algonquinensis* Ashm., ASHMEAD, t. c. p. 319.
Eufroggattia **n. n.** for *Froggattia* Ashm., ASHMEAD, p. 126, P. ent. Soc. Washington vi.
Eukoebelea **n. n.** for *Kæbelea* Ashm., ASHMEAD, p. 126, t. c.
Eulophopteryx **n. g.** type *E. chapadæ* Ashm., ASHMEAD, Chalcid. p. 341, *E. chapadæ*, Brazil, pl. xxxviii, fig. 6, p. 506, id. **n. sp.**
Eulophus exiguus Nees to *Asynacta*. MAYR, p. 589, Verh. Ges. Wien liv.
E. albitarsis, p. 164, *striatipes*, *japonicus*, p. 165, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. spp.**
Euophthalmomyia **n. g.** type *E. pallidipes* Ashm., ASHMEAD, Chalcid. p. 339.
Eupelmus formosæ, Formosa, ASHMEAD, p. 154, J. N. York Ent. Soc. xii; *E. koebelei*, *acaudus*, *proximus*, p. 488, *compressiventris*, *aprilis*, *chapadæ*, *santaremensis*, *persimilis*, p. 489, *corumbæ*, *unifasciatus*, *simillimus*, *magniclavatus*, p. 490, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Euplectrus manilæ, *philippinensis*, Philippines, ASHMEAD, p. 16, J. N. York Ent. Soc. xii, *E. japonicus*, *nigromaculatus*, Japan, ASHMEAD, p. 163, t. c.; *E. brasiliensis*, p. 516, *corumbæ*, *solitarius*, *chapadæ*, p. 517, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Euryophrys Först. = (*Calypso* Hal.), ASHMEAD, p. 126, P. ent. Soc. Washington vi.

- Eurytoma rubicola*, natural history, HÖPPNER, pp. 161–171, Allg. Zeitschr. Ent. ix.
- E. infracta*, Dalmatia, p. 580, *timaspidis*, Montpellier, p. 582, MAYR, Verh. Ges. Wien liv; *E. nikkoensis*, *atamiensis*, p. 149, *japonica*, *binotata*, *hakonensis*, *mitsukurii*, p. 150, Japan, ASHMEAD, J. N. York Ent. Soc. xii, *E. manilensis*, Philippines, ASHMEAD, p. 13, t. c. : **n. spp.**
- Eusayia* **n. n.** for *Sayiella* Ashm., ASHMEAD, p. 126, P. ent. Soc. Wash- ington vi.
- Eustypura* **n. g.** type *E. bicolor* Ashm., ASHMEAD, Chalcid. p. 251, *E. bicolor*, pl. xxxi, fig. 4, *sexmaculata*, fig. 5, p. 412, *smithii*, p. 413, Brazil, ASHMEAD, t. c. **n. spp.**
- Ecoristobia* **n. g.** *Encyrtidæ*, *E. philippinensis* **n. sp.**, Manila, ASHMEAD, p. 15, J. N. York Ent. Soc. xii.
- Froggattia* **n. g.** type *F. polita* Ashm., ASHMEAD, Chalcid. p. 238.
- Haltichella ludlowæ*, Philippines, ASHMEAD, p. 13, J. N. York Ent. Soc. xii, **n. sp.**
- Halticoptera laticeps*, Japan, ASHMEAD, p. 152, t. c. **n. sp.**
- Hemitorymus* **n. g.** type *H. thoracicus* Ashm., ASHMEAD, Chalcid. p. 243; *H. thoracicus*, Chapada, p. 401, id. t. c. **n. sp.**
- Heptasmicra* **n. g.** type *Smicra oblitterata* Walk., ASHMEAD, Chalcid. p. 252; *H. persimilis*, *affinis*, *longicaudata*, *lineaticoxus*, p. 452, *quadrimacu- lata*, p. 453, Brazil, id. t. c. **n. spp.**
- Herbertia howardi*, pl. xxxv, fig. 6, *brasiliensis*, Brazil, p. 474, ASHMEAD, Chalcid. **n. spp.**
- Hexasmicra* **n. g.** type *Smicra transversa* Walk., ASHMEAD, Chalcid. p. 252; *H. trinidadensis*, *brasiliensis*, Brazil, id. p. 454, t. c. **n. spp.**
- Holcopeltoideus* **n. g.** type *H. petiolata* Ashm., ASHMEAD, Chalcid. p. 341.
- Holochalcis* **n. g.** *H. madagascariensis*, p. 258, Madagascar, *albipes*, p. 259, Nossi-Bé, **n. spp.**, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Homoporus japonicus*, Atami, ASHMEAD, p. 157, J. N. York Ent. Soc. xii, **n. sp.**
- Hontalia cameroni*, pl. xxxii, fig. 4, *kirbyi*, fig. 5, Santarem, ASHMEAD, Chalcid. p. 458, **n. spp.**
- Hoplocrepis bifasciata*, pl. xxxviii, fig. 5, *brasiliensis*, Brazil, p. 505, ASHMEAD, t. c. **n. spp.**
- Horismenus bisulcus*, *brasiliensis*, p. 507, *corumbæ*, *persimilis*, *aneicollis*, p. 508, Brazil, ASHMEAD, t. c. **n. spp.**
- Hubbardiella* **n. g.** type *H. arizonensis* Ashm., ASHMEAD, Chalcid. p. 339.
- Hydrorhoa* **n. g.** *Eucharinæ*, p. 240, *H. striaticeps* **n. sp.**, Madagascar, p. 241, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Hypopteromalus* **n. g.** type *P. tabacum* Fitch, ASHMEAD, Chalcid. p. 320.
- Ischnopsis thoracica*, *cyanea*, Brazil, ASHMEAD, t. c. p. 487, **n. sp.**
- Isosomodes brasiliensis*, pl. xxxiii, fig. 1, p. 460, *nigriceps*, p. 461, fig. 2, Santarem, ASHMEAD, t. c. **n. spp.**
- Kapala furcata*, ♀ described, KIEFFER, p. 243, Berlin. ent. Zeitschr. xlix.
- K. splendens*, Brazil, pl. xxxv, fig. 4, p. 473, ASHMEAD, Chalcid. **n. sp.**
- Koebelea* **n. g.** type *K. australiensis* Ashm., ASHMEAD, t. c. p. 238. [Cf. *Eukoebelea* below.]
- Kradibia brownii*, Philippines, ASHMEAD, p. 342, Ent. News Philad. xv, **n. sp.**
- Lasiokapala serrata*, Brazil, pl. xxxv, fig. 5, p. 474, ASHMEAD, Chalcid. **n. sp.**
- Lathromeris*, parasitising egg of *Chrysopa*, KRYGER, Ent. Meddel. ii. p. 340.
- Lelaps apicalis*, p. 479, *affinis*, *ferruginea*, p. 480, *aneiceps*, *halidayi*, *abdo- minalis*, pl. xxxvi, fig. 1, p. 481, *bimaculata*, *stylata*, p. 482, Brazil, ASHMEAD, Chalcid. **n. spp.**
- Leptochalcis* **n. g.**, p. 251, *L. flicornis* **n. sp.**, Madagascar, p. 252, KIEFFER, Berlin. ent. Zeitschr. xlix.

- Leucodesmia flaviceps*, Brazil, ASHMEAD, Chalcid. p. 518, **n. sp.**
Leucospis japonica ♂, ASHMEAD, p. 147, J. N. York Ent. Soc. xii.
L. enderleini, Santarem, ASHMEAD, Chalcid. p. 405, pl. xxxi, fig. 1, **n. sp.**
Lophocomus cyaneus, Brazil, ASHMEAD, t. c. p. 506, **n. sp.**
Macrorileya **n. g.** type *R. acanthi* Ashm., ASHMEAD, t. c. p. 264.
Megastigmus japonicus, koebelei, Japan, ASHMEAD, p. 146, J. N. York Ent. Soc. xii, **n. spp.**
Melanosmicra **n. g.** type *M. immaculata* Ashm., ASHMEAD, Chalcid. p. 251, *M. immaculata*, Chapada, p. 448, **n. sp.**
Mesidia pumila, Aachen, MAYR, p. 588, Verh. Ges. Wien liv, **n. sp.**
Metadontia flavolineata, similis, p. 453, *affinis*, p. 454, Brazil, ASHMEAD, Chalcid. **n. spp.**
Metopon brasiliense, p. 497, *magniclavatum*, p. 498, Brazil, ASHMEAD, t. c. **n. spp.**
Microchalcis **n. g.** p. 255, *M. quadridens* **n. sp.**, Bitsch, p. 256, KIEFFER, Berlin. ent. Zeitschr. xlix.
Microterys japonicus, Gifu, ASHMEAD, p. 155, J. N. York Ent. Soc. xii, **n. sp.**
Mirocerus **n. g.** type *M. pyelæ* Ashm., ASHMEAD, Chalcid. p. 309.
Mischosmicra **n. g.** type *M. kahlui* Ashm., ASHMEAD, t. c. p. 251.
Monodontomerus japonicus, Nikko, ASHMEAD, p. 83, J. N. York Ent. Soc. xii, **n. sp.**
Mormoniella **n. g.** type *M. brevicornis* Ashm., ASHMEAD, Chalcid. p. 316.
Nasonia **n. g.** type *N. brevicornis* Ashm., ASHMEAD, t. c. p. 317.
Neocatolaccus **n. g.** type *Cat. tylodermæ* Ashm., ASHMEAD, t. c. p. 320.
Neorileya **n. g.** type *N. flavipes* Ashm., ASHMEAD, t. c. p. 264; *N. flavipes*, Brazil, p. 466, pl. xxxvi, fig. 2, id. t. c. **n. sp.**
Nesomyia **n. g.** type *N. albipes* Ashm., ASHMEAD, t. c. p. 344; *N. albipes, cinctiventris*, Japan, ASHMEAD, p. 161, J. N. York Ent. Soc. xii, **n. spp.**
Notanisomorpha **n. g.** type *N. collaris* Ashm., ASHMEAD, Chalcid. p. 356.
Octosmicra **n. g.** type *O. laticeps* Ashm., ASHMEAD, t. c. p. 252; *O. nigro-maculata*, p. 450, *trimaculata*, p. 451, Brazil, id. t. c. **n. spp.**
Omphale brasiliensis, Chapada, ASHMEAD, t. c. p. 504, **n. sp.**
Oncochalcis **n. g.** p. 161, *O. marginata* **n. sp.**, India, p. 162, CAMERON, Entomologist 1904.
Ophelinoides japonicus, Hakone, p. 163, pl. viii, fig. 4, ASHMEAD, J. N. York Ent. Soc. xii, **n. sp.**
Ormyrus, revision of European, with host-galls, variation etc., MAYR, pp. 559–580, Verh. Ges. Wien liv.
O. destefanii, Sicily, p. 566, *wachtli*, Dalmatia, p. 569, MAYR, t. c.; *O. brasiliensis*, Chapada, ASHMEAD, Chalcid. p. 401 : **n. spp.**
Orthochalcis **n. g.** for *Euchalcis fertonii*, KIEFFER, p. 265, Berlin. ent. Zeitschr. xlix.
Oxycoryphus **n. g.** near *Stomatocerus*, p. 109, *O. pilosellus* **n. sp.**, Deesa, p. 110, CAMERON, Entomologist 1904.
Pachyneura nawai, mitsukurii, gifuensis, Japan, ASHMEAD, 158, J. N. York Ent. Soc. xii, **n. spp.**
Pachycrepoides **n. g.** type *P. dubius* Ashm., ASHMEAD, Chalcid. p. 329.
Paracrias **n. g.** type *P. laticeps* Ashm., ASHMEAD, t. c. p. 343; *P. laticeps*, Brazil, pl. xxxix, fig. 1, p. 510, id. **n. sp.**
Parapteromalus **n. g.** type *P. isosomatis* Ashm., ASHMEAD, t. c. p. 320.
Parasaphes **n. g.** type *P. iceryæ* Ashm., ASHMEAD, t. c. p. 328.
P. japonicus, flavipes, Japan, ASHMEAD, p. 157, J. N. York Ent. Soc. xii, **n. spp.**
Paraspalangia **n. g.** type *P. annulipes* Ashm., ASHMEAD, Chalcid. p. 334.
Paraterobia **n. g.** type *P. nigriceps* Ashm., ASHMEAD, t. c. p. 274.
Peloretelus **n. g.** type *P. cæruleus* Ashm., ASHMEAD, t. c. p. 341; *P. cæruleus*, Brazil, p. 509, id. **n. sp.**

- Pentarthron brasiliensis*, Bahia, ASHMEAD, t. c. p. 521, **n. sp.**
Pestasmicra **n. g.** type *P. brasiliensis* Ashm., ASHMEAD, t. c. p. 252.
Perilampus japonicus, Sapporo, ASHMEAD, p. 151, J. N. York Ent. Soc. xii;
P. brasiliensis, Chapada, pl. xxxiv, fig. 4, p. 467, ASHMEAD, t. c. :
n. spp.
Pheidolo xenus **n. g.** type *P. wheeleri* Ashm., ASHMEAD, t. c. p. 328.
Phlebotopones abdominalis, *pertyi*, pl. xxxvii, fig. 3, Brazil, ASHMEAD, t. c.
p. 492, **n. spp.**
Platyterma atamiense, Japan, ASHMEAD, p. 156, J. N. York Ent. Soc. xii,
n. sp.
Plesioctenodes **n. g.** type *P. brasiliensis*, Ashm., ASHMEAD, Chalcid. p. 243 ;
P. brasiliensis, Corumba, p. 400, id. t. c. **n. sp.**
Pleurotropis atamiensis, Japan, ASHMEAD, p. 160, J. N. York Ent. Soc. xii,
n. sp.
Plutothrix forsteri, Aachen, MAYR, p. 586, Verh. Ges. Wien liv, **n. sp.**
Podagrion quinqueidentatus, Japan, ASHMEAD, p. 84, J. N. York Ent.
Soc. xii; *P. cyaneus*, Santarem, ASHMEAD, Chalcid. p. 402, **n. spp.**
Polistomorpha nigromaculata, Panama, CAMERON, p. 96, Tr. Amer. ent.
Soc. xxx, **n. sp.**
Polynema brasiliensis, *rufescens*, Brazil, ASHMEAD, Chalcid. p. 521, **n. spp.**
Prodecatoma **n. g.** type *P. flavescens* Ashm., ASHMEAD, t. c. p. 261; *P.*
bruneiventris, p. 463, *flavescens*, pl. xxxiii, fig. 6, *thoracica*, *nigra*,
p. 464, Brazil, id. t. c. : **n. spp.**
Prospaltella **n. n.** for *Prospalta* How. 1894, ASHMEAD, p. 126, P. ent. Soc.
Washington vi.
Pseudochalcis conica, *flavopicta*, Brazil, ASHMEAD, Chalcid. p. 407, **n. sp.**
Pseudochalcis nigrocyanea, Brazil, pl. xxxiv, fig. 6, p. 468, ASHMEAD, t. c. ;
P. chilensis, Chile, KIEFFER, p. 242, Berlin. ent. Zeitschr. xlix : **n. spp.**
Psilochalcis **n. g.** p. 250, *P. longigena* **n. sp.**, Madagascar, p. 251, KIEFFER,
t. c.
Psychophagus **n. g.** for *Diglochis* Thoms. nec Först., MAYR, p. 598, Verh.
Ges. Wien liv.
Rileyia orbitalis, Santarem, ASHMEAD, p. 467, Chalcid. **n. sp.**
Sayella **n. g.** type *Smicra debilis* Say, ASHMEAD, t. c. p. 251.
Schizaspidia tenuicornis, Japan, ASHMEAD, p. 151, J. N. York Ent. Soc.
xii, **n. sp.**
Schwarzella **n. g.** type *S. arizonensis* Ashm., ASHMEAD, Chalcid. p. 256.
Scotolinx **n. g.** type *S. gallicola* Ashm., ASHMEAD, t. c. p. 354.
Scymnophagus **n. g.** type *S. townsendi* Ashm., ASHMEAD, t. c. p. 319.
Spalangia brasiliensis, Brazil, ASHMEAD, t. c. p. 502, **n. sp.**
Spathopus **n. g.** type *S. anomalipes* Ashm., ASHMEAD, t. c. p. 272.
Spilochalcis andrei **n. n.** for *flavescens* André, ASHMEAD, t. c. p. 418.
Spilochalcis: the following **n. spp.** are described by ASHMEAD, t. c.: *S.*
tarsalis, *atrata*, *santaremensis*, p. 428, *rufodorsalis*, *laticeps*, *nigro-*
petiolata, *rufoscutellaris*, p. 429, *flavobasalis*, *janeiroensis*, *flavoorbitalis*,
p. 430, *persimilis*, *unimaculata*, *perplexa*, p. 431, *imitator*, *simillimus*,
chapadæ, *albomaculata*, p. 432, *santarema*, *erythrogaster*, *flavoaxillaris*,
p. 433, *marginata*, *tuberculata*, *bidentata*, p. 434, *maculata*, *hempeli*,
devia, p. 435, *nigropleuralis*, *corumbicola*, p. 436, *mulleri*, *howardi*,
insularis, *trinidadensis*, p. 437, *incongrua*, *mayri*, *timida*, p. 438, *bian-*
nulata, *medius*, *cameroni*, *enocki*, p. 439, *fusiformis*, *urichi*, *axillaris*,
p. 440, *trilineata*, *marshalli*, *morleyi*, p. 441, *apicalis*, *unilineata*,
lineocoxalis, *fulleri*, p. 442, *corumbensis*, *chapadæ*, *brancensis*, p. 443,
vagabunda, *lanceolata*, *vau*, *incompleta*, p. 444, *persimilis*, *hollandi*,
corumbæ, p. 445, *paraguayensis*, *dimidiata*, *meridionalis*, *tripunctata*,
p. 446, *bipunctata*, p. 447, *S. America*, ASHMEAD, t. c. **n. spp.**
Stenomesoidea **n. g.** type *S. mellea* Ashm., ASHMEAD, t. c. p. 355.
Stenomesus dimidiatus, Brazil, pl. xxxix, fig. 3, p. 519, ASHMEAD, t. c. **n. sp.**

- Stibula nigriceps*, Santarem, ASHMEAD, pl. xxxv, fig. 2, p. 468, t. c. **n. sp.**
Stigmatocrepis **n. g.** type *S. americana* Ashm., ASHMEAD, t. c. p. 273.
Stomatoceras hakonensis, clavicornis, Japan, ASHMEAD, p. 148, J. N. York Ent. Soc. xii, **n. spp.**
Stylophorella **n. g.** type *S. perplexa* Ashm., ASHMEAD, Chalcid. p. 275.
Sycoryctes philippinensis, Philippines, ASHMEAD, p. 342, Ent. News Philad. xv, **n. sp.**
Sycoscapterella **n. g.** type *Sycoscapter anguliceps* W., ASHMEAD, Chalcid. p. 239.
Sycoscapteridea **n. g.** type *Sycoscapter monilifer*, ASHMEAD, t. c. p. 239.
Sympiesis mikado, Japan, ASHMEAD, p. 164, J. N. York Ent. Soc. xii, **n. sp.**
Sympiesomorpha **n. g.** type *S. brasiliensis* Ashm., ASHMEAD, Chalcid. p. 352; *S. brasiliensis, obscura*, Brazil, p. 519, ASHMEAD, t. c. **n. spp.**; *S. japonica*, Gifu, ASHMEAD, p. 163, J. N. York Ent. Soc. xii : **n. spp.**
Syntomaspis aprilis, holcaspidea, p. 397, *flavicollis* p. 398, Brazil, ASHMEAD, t. c. **n. spp.**
Syrphophagus nigrocyaneus, Japan, ASHMEAD, p. 155, t. c. **n. sp.**
Systolodes brasiliensis, Chapada, ASHMEAD, p. 466, Chalcid. **n. sp.**
Tachardiaphagus **n. g.** type *T. thoracicus* Ashm., ASHMEAD, t. c. p. 303.
Tachinephagus **n. g.** type *T. zealandicus* Ashm., ASHMEAD, t. c. p. 304; *T. fuscipennis*, Japan, ASHMEAD, p. 155, J. N. York Ent. Soc. xii : **n. sp.**
Taftia **n. g.** *Ectromini*, *T. prodeniae* **n. sp.**, Manila, ASHMEAD, p. 137, P. U. S. Mus. xxviii.
Tetranemopteryx **n. g.** type *Sycoscapter 4-setosa* Westw., ASHMEAD, Chalcid. p. 239.
Tetrasmicra **n. g.** type *Smicra concitata* Walk., ASHMEAD, t. c. p. 252.
Tetrastichodes pallidipes, Japan, ASHMEAD, p. 162, J. N. York Ent. Soc. xii, **n. sp.**
Tetrastichus philippinensis, Philippines, ASHMEAD, p. 15, t. c.; *T. hakonensis, atamiensis, tricolor*, Japan, ASHMEAD, p. 162, t. c.; *T. albitarsis, chapadae, brasiliensis*, pl. xxxix, fig. 2, p. 515, *incongruus*, p. 516, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Thaumapus acuminatus, Santarem, ASHMEAD, p. 448, t. c. **n. sp.**
Thaumatella pulchripennis, Brazil, ASHMEAD, t. c. p. 406, pl. xxxi, fig. 2, **n. sp.**
Torymus mesembryanthemi, S. Africa, CAMERON, p. 109, Rec. Albany Mus. i; *T. japonicus, sapporoensis*, p. 82, *gifuensis*, p. 83, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *T. thomsoni*, Quebec, FYLES, p. 106, Canad. Ent. xxxvi; *T. wickhami*, Utah, ASHMEAD, p. 302, Ent. News Philad. xv; *T. chapadae, smithi*, p. 398, *sylvicola*, p. 399, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Trichencyrtus **n. g.** type *T. chapadae* Ashm., ASHMEAD, p. 291, t. c.; *T. robustus*, Brazil, pl. xxxvii, fig. 5, p. 495, id. **n. sp.**
Trichochalcis **n. g.** p. 254, *T. inermis* **n. sp.**, Madagascar, p. 255, KIEFFER, Berlin. ent. Zeitschr. xlix.
Trichogramma japonicum, Gifu, ASHMEAD, p. 165, J. N. York Ent. Soc. xii, **n. sp.**
Trichoporus melleus, viridicyaneus, persimilis, Brazil, ASHMEAD, Chalcid. p. 512, **n. spp.**
Tridymus hakonensis, Japan, ASHMEAD, p. 152, J. N. York Ent. Soc. xii, **n. sp.**
Trigonoderus brasiliensis, Chapada, pl. xxxvi, fig. 4, p. 485, ASHMEAD, Chalcid. **n. sp.**
Trigonogastra **n. g.** type *T. aurata* Ashm., ASHMEAD, t. c. p. 330; *T. hakonensis*, Japan, ASHMEAD, p. 158, J. N. York Ent. Soc. xii, **n. sp.**
Trigonura dorsalis, Santarem, ASHMEAD, t. c. p. 406, **n. sp.**
Trismicra **n. g.** type *Smicra contracta* Walk., ASHMEAD, t. c. p. 252.

- Tropidogastra* **n. g.** type *T. arizonensis* Ashm., ASHMEAD, t. c. p. 323.
Uroderostenus **n. g.** type *U. pleuralis* Ashm., ASHMEAD, t. c. p. 343.
Uroentedon **n. g.** type *U. verticellata* Ashm., ASHMEAD, Chalcid. p. 341 ;
U. verticellatus, Brazil, pl. xxxviii, fig. 4, p. 505, id. **n. sp.**
Westwoodella **n. g.** type *Oligosita subfasciata* Westw., ASHMEAD, t. c.
p. 359.
Xanthoatomus **n. g.**, ASHMEAD, t. c. p. 360.
Xanthomelanus **n. g.** type *Chalcis dimidiata* Fab., ASHMEAD, Chalcid.
p. 251.
Xenocrepis pura, Aachen, MAYR, p. 584, Ver. Ges. Wien liv, **n. sp.**
Zagrammosoma **n. g.** type *Hippo. multilineata* Ashm., ASHMEAD, t. c.
p. 354.
Zaischnopsis, **n. n.** for *Ischnopsis* Ashm., ASHMEAD, p. 126, P. ent. Soc.
Washington vi.
Zuommomyia **n. g.** type *Chrysocharis stigmata* Ashm., ASHMEAD, Chalcid.
p. 340.

PROCTOTRYPIDÆ (incl. BETHYLIDÆ).

[Cf. ASHMEAD (44, 46, 47, 48), BRUES (190), CAMERON (224, 231), KIEFFER (793, 794, 798), KIEFFER & MARSHALL (799), MARCHAL (906), MAYR (928), WASSILIEFF (1489).]

The introductory matter of KIEFFER & MARSHALL, *Proctotrypidæ* of Europe and Algeria, is published (799).

Remarkable development of *Polygnotus minutus*, MARCHAL, Arch. Zool. exp. xxxii, pp. 300-315.

Allotropa japonica, Japan, ASHMEAD, p. 74, J. N. York Ent. Soc. xii, **n. spp.**

Amblyaspis japonica, Japan, ASHMEAD, p. 74, t. c. **n. sp.**

Anommatium ashmeadi, Aachen, MAYR, p. 592, Verh. Ges. Wien liv, **n. sp.**

Anopedias japonicus, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, **n. sp.**

Apenesia nigra, W. Africa, p. 364, *substriata*, Bolivia, p. 365, *punctata*, *unicolor*, W. Africa, p. 366, *proxima*, New Guinea, p. 367, *levis*, W. Africa, p. 368, KIEFFER, Ann. Mus. Genova xli, **n. spp.**

Aphanogmus hakonensis, Japan, ASHMEAD, p. 71, J. N. York Ent. Soc. xii, **n. sp.**

Bocchus atriceps, New York, BRUES, p. 118, Canad. Ent. xxxvi, **n. sp.**

Ceraphron manilæ, Philippines, ASHMEAD, p. 135, P. U. S. Mus. xxviii, **n. sp.**

Dendrocerus, characters, correction, ASHMEAD, p. 71, J. N. York Ent. Soc. xii.

D. ratzeburgi, Japan, ASHMEAD, p. 70, pl. vii, fig. 1, t. c. **n. sp.**

Diapria mitsukurii, Japan, ASHMEAD, p. 69, t. c. **n. sp.**

Discleroderma tuberculatum, description, KIEFFER, p. 372, Ann. Mus. Genova xli.

Dissolcus japonicus, *flavipes*, Japan, ASHMEAD, p. 73, J. N. York Ent. Soc. xii, **n. spp.**

Dissomphalus tibialis, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii ;
D. brevinervis, Sumatra, KIEFFER, p. 371, Ann. Mus. Genova xli :
n. spp.

Dryinus stantoni, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii ; *D. nigrellus*, Long Island, BRUES, p. 117, Canad. Ent. xxxvi ; *D. brachycerus*, Argentina, p. 351, *niger*, Italy, p. 352, KIEFFER, Ann. Mus. Genova xli : **n. spp.**

Ecitopria proxima, Sardinia, *fusca*, Sumatra, KIEFFER, p. 378, t. c. **n. spp.**

Epyris bipartitus var. *n. sublevis*, KIEFFER, p. 407, t. c.

- E. foveatus*, Italy, p. 396, *interruptus*, New Guinea, p. 398, *armatitarsis*, Tunis, p. 399, *spiniscapus*, Erythrea, p. 400, *spinitarsis*, *breviscapus*, p. 402, *gracilipennis*, p. 403, *pilosipes*, p. 404, W. Africa, *striatus*, Burma, *geniculatus*, Erythrea, p. 406, *feai*, Bombay, p. 408, *tridentatus*, Guinea, p. 409, KIEFFER, t. c.; *E. albopilosus*, Darjiling, CAMERON, p. 307, Entomologist 1904; *E. atamensis*, Japan, ASHMEAD, p. 67, J. N. York Ent. Soc. xii; *E. flaviventris*, p. 526, *reticulatus*, p. 527, Texas, KIEFFER, Arkiv Zool. i : **n. spp.**
- Eupsenella herbsti*, Concepcion, KIEFFER, p. 142, Revist. chilena viii, **n. sp.**
- Gonatopus sjostedti*, Texas, KIEFFER, p. 525, Arkiv Zool. i; *G. cilipes*, Paraguay, *planiceps*, Tuscany, p. 355, *breviforceps*, Patagonia, p. 356, *longicornis*, Bolivia, p. 357, *albosignatus*, Tuscany, *unilineatus*, Sardinia, p. 358, *bilineatus*, p. 359, *bifasciatus*, p. 360, *camelinus*, p. 361, *gracilicornis*, p. 361, *dentatiforceps*, p. 362, Tuscany, KIEFFER, Ann. Mus. Genova xli : **n. spp.**
- Goniozus philippinensis*, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii; *G. japonicus*, Gifu, ASHMEAD, p. 67, J. N. York Ent. Soc. xii; *G. longiceps*, Texas, KIEFFER, p. 529, Arkiv Zool. i; *G. brevicornis*, Nicaragua, KIEFFER, p. 382, Ann. Mus. Genova xli : **n. spp.**
- Hadronotus carinatifrons*, habits, GIRAULT, p. 337, Ent. News Philad. xv.
- H. philippinensis*, Manila, ASHMEAD, p. 11, J. N. York Ent. Soc. xii; *H. japonicus*, *hakonensis*, Japan, ASHMEAD, p. 74, t. c. : **n. spp.**
- Holepyris africanus*, Erythrea, p. 391, *bidentatus*, Sardinia, p. 392, *pedestris*, p. 393, *dubius*, Tuscany, *hyalinipennis*, Sardinia, p. 394, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Homoglenus tripartitus*, Guinea, KIEFFER, p. 388, t. c. **n. sp.**
- Hoplogryon sulcatus*, Texas, KIEFFER, p. 538, Arkiv Zool. i, **n. sp.**
- Hoploteleia rufidorsum*, Rio-Janeiro, KIEFFER, p. 533, t. c. **n. sp.**
- Lapitha nigriceps*, Brazil, KIEFFER, p. 537, t. c. **n. sp.**
- Lygocerus japonicus*, *koebelei*, Japan, ASHMEAD, p. 70, J. N. York Ent. Soc. xii, **n. spp.**
- Macrohynnys lepidus*, Aachen, MAYR, p. 593, Verh. Ges. Wien liv, **n. sp.**
- Macroteleia punctata*, Texas, KIEFFER, p. 532, Arkiv Zool. i, **n. sp.**
- Miota hakonensis*, Japan, ASHMEAD, p. 68, J. N. York Ent. Soc. xii, **n. sp.**
- Mystrocnemis africana*, Guinea, KIEFFER, p. 363, Ann. Mus. Genova xli, **n. sp.**
- Odontepyrus flavinervis*, Sumatra, KIEFFER, p. 378, t. c. **n. sp.**
- Oxylabis bifoveolatus*, New Jersey, BRUES, p. 119, Canad. Ent. xxxvi, **n. sp.**
- Parascleroderma nigriceps*, Tuscany, KIEFFER, p. 376, Ann. Mus. Genova xli, **n. sp.**
- Parasierola gestroi*, Sardinia, p. 380, *flavicoxis*, p. 381, *nigricoxis*, p. 382, Nicaragua, KIEFFER, t. c. **n. spp.**
- Pentacantha longicornis*, Texas, KIEFFER, p. 536, Arkiv Zool. i, **n. sp.**
- Perisemus fulvicornis*, supplemental note, NIELSEN, Ent. Meddel. ii, p. 333.
- P. coniceps*, p. 384, *dubius*, *mandibularis*, p. 385, *gestroi*, p. 386, Italy, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Polygnotus gifuensis*, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, **n. sp.**
- Pristocera erythrura*, Somaliland, KIEFFER, p. 387, Ann. Mus. Genova xli, **n. sp.**
- Proctotrypes*, *scymni*, p. 67, *japonicus*, p. 68, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *P. unidentatus*, Chile, KIEFFER, p. 145, Revist. chilena viii : **n. spp.**
- Proplatygaster* **n. g.** p. 144, *rufipes* **n. sp.**, Chile, p. 145, KIEFFER, t. c.
- Pseudisobrachium laticeps*, Bolivia, p. 368, *distinguendum*, Paraguay, *intermedium*, Sardinia, p. 369, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Rhabdepyris armatus*, New Guinea, p. 410, *R. ? albipes*, Paraguay, p. 411,

- KIEFFER, t. c.; *R. hæmorrhoidalis*, Texas, KIEFFER, p. 528, Arkiv Zool. i : **n. spp.**
- Ropronia garmani*, pl. xiv, p. 212, Ent. News Philad. xv.
- Sactogaster hakonensis*, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, **n. sp.**
- Scaphepyris rufus*, description, KIEFFER, p. 370, Ann. Mus. Genova xli.
- Scelio striatigena*, p. 530, *bisulcatus*, p. 531, Texas, KIEFFER, Arkiv Zool. i, **n. spp.**
- Scleroderma cereicolle*, Guinea and Italy, p. 374, *luteicolle*, Burma, *nigrum*, Sumatra, *castaneum*, Ternate, p. 375, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Spilomicrus japonicus*, Sapporo, ASHMEAD, p. 69, J. N. York Ent. Soc. xii, **n. sp.**
- Tanynotus* **n. g.** *Bethylinæ*, p. 140, *T. rufithorax* **n. sp.**, Cape Colony, p. 141, CAMERON, Rec. Albany Mus. i.
- Telenomus*, parthenogenesis, WASSILIEW, Zool. Anz. xxvii, p. 578.
- T. catacanthæ*, Philippines, ASHMEAD, p. 284, Canad. Ent. xxxvi; *T. atamiensis*, *nawai*, *mitsukurii*, p. 72, *hakonensis*, *gifuensis*, p. 73, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *T. fimbriatus*, Wisconsin, KIEFFER, p. 539, Arkiv Zool. i : **n. spp.**
- Trissacantha striaticeps*, Texas, KIEFFER, p. 535, Arkiv Zool. i, **n. sp.**

CYNIPIDÆ.

- [Cf. ASHMEAD (46), BEUTENMÜLLER (119), CAMERON (224, 225), FROGGATT (562), KIEFFER (791, 795, 797), MATTEI (923), RÖSSIG (1189).]
- KIEFFER completes the Vol. on *Cynipides* etc., ANDRÉ's Hym. Eur. Alg. vii bis.
- List of types of *Cynipidæ* in the American Museum of Natural History, BEUTENMÜLLER (120).
- Postembryonal development of *Cynipidæ* larvæ: their glands, with other histology, RÖSSIG, Zool. Jahrb. Syst. pp. 19-70, pls. iii-vi.
- Anacharoides* **n. g.** *Anacharinæ*, *A. striaticeps* **n. sp.**, Cape Colony, CAMERON, p. 160, Rec. Albany Mus. i.
- Andricus targionii*, gall, TROTTER, p. 86, Marcellia iii.
- A. japonicus*, Hakone, ASHMEAD, p. 81, J. N. York Ent. Soc. xii, **n. sp.**
- Bothrochalcis* **n. g.** *Eucoilinæ*, p. 163, *B. erythropoda* **n. sp.**, Grahamstown, p. 164, CAMERON, Rec. Albany Mus. i.
- Callirhytis hakonensis*, p. 81, *tobiuro*, p. 82, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. sp.**
- Cynips* **n. sp.**? gall, TROTTER, p. 10, cut, Marcellia iii.
- Dryophanta japonica*, p. 79, *serrate*, *brunneipes*, *nawai*, p. 80, *hakonensis*, *mitsukurii*, p. 81, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. spp.**
- Hypodiranchis aphidæ*, Australia, FROGGATT, p. 612, Agric. Gaz. N. S. W. xv, **n. sp.**
- Neuroterus nawai*, *atemiensis*, *hakonensis*, Japan, ASHMEAD, p. 79, J. N. York Ent. Soc. xii, **n. spp.**
- Oberthurella tibialis*, Cameroons, KIEFFER, p. 107, Ent. Tidskr. xxv, **n. sp.**
- Onychia japonica*, Japan, ASHMEAD, p. 76, J. N. York Ent. Soc. xii, **n. sp.**
- Paraulax* **n. g.** p. 43, *perplexus* **n. sp.**, Chile, p. 44, KIEFFER, Revist. chilena viii.
- Rhodites hakonensis*, Japan, ASHMEAD, p. 82, J. N. York Ent. Soc. xii, **n. sp.**
- Synergus atemiensis*, p. 77, *gifuensis*, *hakonensis*, p. 78, Japan, ASHMEAD, t. c. **n. spp.**
- Xyalaspis atemiensis*, Japan, ASHMEAD, p. 76, t. c. **n. sp.**
- Xystus japonicus*, Japan, ASHMEAD, p. 77, t. c. **n. sp.**

SESSILIVENTRES.

SIRICIDÆ and CEPHIDÆ.

[Cf. ASHMEAD (42), MOCSÁRY (953).]

KONOW continues his synopsis of *Chalastogastra*, pp. 225–288, *Cephini* and *Xyelini*, as part of Zeitschr. Hym. Dipt. iv.

Janus compressus, habits, metamorphosis, JABLONOWSKI, pp. 67–72 & 89–94, Rov. Lapok xi.

Paururus pinicola, characters ♂, ASHMEAD, p. 64, Canad. Ent. xxxvi.

P. californicus, *hopkinsi*, N. America, id. l. c. **n. spp.**

Sirex augur, metamorphosis, XAMBEU, p. 167, Ann. Soc. Linn. Lyon l.

S. taxodii, *fiskei*, N. America, ASHMEAD, p. 63, Canad. Ent. xxxvi, **n. spp.**

Syrista similis, Japan, *speciosa*, Tonkin, MOCSÁRY, p. 496, Ann. Mus. Hungar. ii, **n. spp.**

Tremex atratus, Tonkin, MOCSÁRY, p. 498, t. c. **n. sp.**

Xiphydria melanaria, *varia*, Tonkin, MOCSÁRY, p. 497, t. c. **n. spp.**

TENTHREDINIDÆ.

[Cf. BISSCHOPP (131), CAMERON (236), DONCASTER (402), KONOW (833–838), MOCSÁRY (951), VAN ROSSUM (1190), SAUSSURE (1218).]

MORICE continues his notes on British *Tenthredinidæ*, Ent. Mag. xl, passim.

Tenthredinoidea of Alaska, KINCAID (801).

ADELUNG has notes on the *Tenthredinidæ* enumerated and described by Konow last year, Annuaire Mus. St. Petersb. viii. T. c. pp. xxxvii, xxxviii.

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- L. scitula*, Peru, p. 233, *adusta*, *fucosa*, *parca*, p. 234, *immunda*, Costa Rica, *vitreata*, p. 235, *nubeculosa*, *vulga*, p. 236, Brazil, KONOW, t. c. **n. spp.**
- Lagium* **n. g.** for *Tenth. atrovioleaceum* Nort., and *irritans* Sm., and *platyceros* Marl., KONOW, p. 246 [2], t. c.
- Leptocercus duplex*, larva, CARPENTIER, p. 46, Zeitschr. Hym. Dipt. iv.
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- Macrophya annulicornis*, Saghalin Island, p. 266, *hispana*, Madrid, p. 267, KONOW, t. c. **n. spp.**
- Megalodontes merceti*, p. 226, *capitalatus*, p. 227, *mundus*, p. 228, Spain, *nigritegulis*, Ural Mts., p. 229, KONOW, t. c. **n. spp.**
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- Pachynematus glesipennis*, Siberia, p. 25, *zadduchi*, Europe, p. 26, *lichtwardti*, Altvater Mts., *pullus*, Europe, *foveolatus*, Siberia, p. 31, *alpestris*, p. 146, *nigerrimus*, p. 148, *gehrs*, p. 149, Europe, *vaginosus*, p. 151, Siberia, *legirupus*, Europe, *saunio*, Siberia, p. 153, *lentus*, p. 154, *sagulatus*, *ravidus*, p. 155, *pumilio*, p. 156, [n. spp. last year] fully described, KONOW, Zeitschr. Hym. Dipt. iv.
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- Priophorus æqualis* ♀, KONOW, p. 240, t. c.
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(c.) *LEPIDOPTERA.*

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PAPILIONIDÆ.

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PIERIDÆ.

[Cf. ALPHÉRAKY (25), BUTLER (207, 208), DANNATT (351), FAWCETT (492), FRUHSTORFER (565), GOELDI (616), KAYE (775), MANDERS (901), MOORE (956), NEAVE (977), REBEL (1122), ROTHSCILD (1194, 1197), SHARPE (1286), SUFFERT (1353, 1354), TRIMEN (1394).]

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DANAIDÆ and ITHOMIIDÆ.

[Cf. FRUHSTORFER (567, 570), KAYE (775), LOWE (887), NEAVE (977), SHELFORD (1289), SUFFERT (1353), SWINHÖE (1364), THIEME (1381).]

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- S. convallaria*, Nias isld., THIEME, p. 163, Berlin. ent. Zeitschr. xlix, **n. sp.**
- Tithorea megara*, early stages, GUPPY, p. 225, pl. xviii, fig. 3, Tr. ent. Soc. London 1904.
- Tronga* and *Menama*, the subspecies, FRUHSTORFER, pp. 167, 168, Berlin. ent. Zeitschr. xlix.

ACRÆIDÆ and HELICONIDÆ.

[Cf. AURIVILLIUS (61), BETHUNE-BAKER (117), NEAVE (977), SHARPE (1286, 1287), SUFFERT (1353, 1354), TRIMEN (1394).]

- Acræa*, many African subsp. n. described, pp. 18-34, SUFFERT, Deutsche ent. Zeitschr. Iris xvii; *A. doubledayi equatorialis* subsp. n., p. 327, *oreas albimaculata* nov. f., p. 329, NEAVE, Nov. Zool. xi; *A. rahira* and varr., pl. xix, fig. 1, p. 231, TRIMEN, Tr. ent. Soc. London 1904.
- A. cinerea*, pl. i, fig. 16, p. 325, *wigginsii*, fig. 3, p. 326, *mystica, clareii*, fig. 4, p. 327, *byatti*, fig. 17, p. 328, Victoria Nyanza, NEAVE, Nov. Zool. xi; *A. leucopyga*, p. 92, *mairassei*, p. 93, *ertli*, p. 94, Africa, AURIVILLIUS, Ent. Tidskr. xxv, with cuts; *A. diogenes*, p. 14, *brahmsii*, p. 15, pl. iii, fig. 4, *lisztii*, p. 17, Africa, SUFFERT, Deutsche ent. Zeitschr. xvii; *A. rohlfsii*, E. Africa, SUFFERT, p. 124, pl. iii, fig. 5, Deutsche ent. Zeitschr. Iris xvii; *A. catori*, Sierra Leone, BETHUNE-BAKER, p. 223, Ann. Nat. Hist. xiv; *A. harrisoni*, Nyangori, SHARPE, p. 132, Entomologist 1904; *A. melanosticta*, Toro, SHARPE, p. 181, Entomologist 1904: **n. spp.**
- Planema*, numerous subsp. n., SUFFERT, pp. 34-39, Deutsche ent. Zeitschr. Iris xvii.
- P. haydni*, Usambara, id. p. 34, t. c. **n. sp.**

NYMPHALIDÆ.

[Cf. ALPHÉRAKY (25), AURIVILLIUS (61), BETHUNE-BAKER (117), DANNATT (351), DYAR (422), FAWCETT (492), FIELD (499, 500), FLETCHER (515, 516), FRUHSTORFER (567), LATHY (860), LEIGH (871), NEAVE (977),

C. OBERTHÜR (1987), ROTHSCILD (1194, 1197), SHARPE (1286, 1287), SHELFORD (1289), SUFFERT (1353, 1354, 1355A), SWINHÖE (1364), THIEME (1379).]

- Acca obiana*, Obi, SWINHÖE, p. 418, Ann. Nat. Hist. xiv, **n. sp.**
- Antanartia amauroptera*, Toro, SHARPE, p. 181, Entomologist 1904, **n. sp.**
- Apatura ilia* varr. n., SCHULTZ, pp. 129-134, Abh. Ges. Grlitz xxiv.
- Apaturina erminea xanthocera* subsp. n., ROTHSCILD, p. 452, Nov. Zool. xi ;
A. erminia erinna, p. 329, figg. 3, 4, *erminia octavia*, fig. 5, other
 subsp. n. pp. 328-332, FRUHSTORFER, Ent. Meddel. ii.
- Argynnis pales* subsp. n., FRUHSTORFER, p. 306, Deutsche ent. Zeitschr.
 Iris xvi ; *A. paphia*, melanic ♀, OBERTHÜR, p. 175, Bull. Soc. ent.
 France 1904 ; *A. pandora* ab. n. *fulva*, COSMOVICI, p. 162, Bull. Soc.
 ent. France 1904 ; *A. adippe norvegica*, SCHULTZ, p. 137, Abh. Ges.
 Grlitz xxiv ; *A. paphia valesina*, localisation of, REBEL, p. 119, Verh.
 Ges. Wien liv.
- A. claudia*, Khamba Jong, pl. ix, fig. 3, p. 136, FAWCETT, P. Z. S. 1904, ii,
n. spp.
- Atella alcippe* subsp. n., FRUHSTORFER, pp. 308-312, Ent. Meddel. ii ; *A.*
alcippe enganica subsp. n., pl. ii, fig. 1, p. 192, FRUHSTORFER, Berlin.
 ent. Zeitschr. xlix.
- Basilarchia proserpina*, ? varr. or hybrids, the allies, FIELD, Psyche xi,
 pp. 1-6, pls. i-iii.
- Brenthis thore*, egg and young larva, CHAPMAN, pp. 236-238, pls. ix, x,
 Ent. Rec. xvi, TRAVIS, t. c. p. 239.
- B. andersoni*, Brit. Columbia, DYAR, p. 39, J. N. York Ent. Soc. xii,
n. sp.
- Catagramma audofleda* (= *felderi* var. Hew.), Peru, THIEME, p. 159, Berlin.
 ent. Zeitschr. xlix, **n. sp.**
- Charaxes*, African subsp. n., SUFFERT, pp. 122, 123, Deutsche ent.
 Zeitschr. Iris xvii ; *C. eudoxus mechowi* ♂, NEAVE, p. 334, Nov. Zool.
 xi ; *C. polyxena enganica* subsp. n., pl. i, fig. 4, p. 194, FRUHSTORFER,
 Berlin. ent. Zeitschr. xlix ; *C. polyxena enganica* subsp. n., FRUH-
 STORFER, p. 341, Stettin Ent. Zeit. lxxv ; *C. jasius*, larva, no. of moults,
 imperfect ecdysis, CRÉTIEN, p. 108, Bull. Soc. ent. France 1904,
 GIARD, t. c. p. 117 ; *C. jasius*, food, GIARD, p. 178, t. c. ; *C. jasius*,
 seasonal dimorphism, larva, GIARD, p. 44, t. c.
- C. harrisoni*, Africa equat., SHARPE, p. 133, Entomologist 1904, **n. sp.**
- Chlorippe godmani*, Venezuela, DANNATT, p. 173, pl. vii, fig. 1, Entomologist
 1904, **n. sp.**
- Cirrochroa malaya* n. subsp., FRUHSTORFER, p. 157, Ins. Börse 1904 ;
C. regina princesa subsp. n., FRUHSTORFER, p. 75, Soc. ent. xix.
- Cupha lampetia lampetina* subsp. n., p. 316, fig. 2, other subsp. n., pp. 316
 -318, FRUHSTORFER, Ent. Meddel. ii ; *C. erymanthis dohertyi* subsp. n.,
 FRUHSTORFER, p. 191, Berlin. ent. Zeitschr. xlix ; *C. erymanthis*
dohertyi subsp. n., FRUHSTORFER, p. 343, Stettin Ent. Zeit. lxxv.
- Cymothoe theobene nebetho* subsp. n., SUFFERT, p. 115, Deutsche ent.
 Zeitschr. Iris xvii.
- C. congoensis*, p. 115, *alexander*, p. 117, *weymeri*, p. 119, Africa, SUFFERT,
 t. c. **n. spp.**
- Cynthia asela* var., GREEN, p. 76, cut, Spolia Zeylan. ii ; *C. arsinoe figalea*
 subsp. n., FRUHSTORFER, p. 26, Soc. ent. xix.
- Cyrestis*, subsp. n., FRUHSTORFER, pp. 323-328, Ent. Meddel. ii ; *C.*
perianther enganica, pl. ii, fig. 2, p. 191, FRUHSTORFER, Berlin. ent.
 Zeitschr. xlix.
- C. giloloensis*, Gilolo, LATHY, p. 71, Entomologist 1904, **n. sp.**
- Didonis laticlavata*, Ecuador, THIEME, p. 159, pl. i, figg. 1, 2, Berlin. ent.
 Zeitschr. xlix, **n. sp.**

- Diestogyna hobleayi*, Victoria Nyanza, NEAVE, p. 334, Nov. Zool. xi; *D. intermixta*, Congo, *butleri* (= *amaranta* Butl. nec Karsch), AURIVILLIUS, p. 96, Ent. Tidskr. xxv : **n. spp.**
- Dione vanillæ* var. *passifloræ*, COCKERELL, p. 331, Canad. Ent. xxxvi.
- Ergolis pagenstecheri*, E. Africa, SUFFERT, p. 125, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
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- Euphaedra edwardsi viridis* subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- E. paradoxa*, Victoria Nyanza, NEAVE, p. 333, Nov. Zool. xi; *E. paradoxa* ♂, SHARPE, p. 132, Entomologist 1904; *E. rattrayi*, p. 182, *christyi*, p. 183, Toro, SHARPE, Entomologist 1904 : **n. spp.**
- Euptera dorothea*, Sierra Leone, BETHUNE-BAKER, p. 223, Ann. Nat. Hist. xiv, **n. sp.**
- Euryphene letitia* tia subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- E. fulgurata*, Congo, AURIVILLIUS, p. 95, with cut, Ent. Tidskr. xxv, **n. sp.**
- Euryphura porphyron* and *plantilla* subsp. n., SUFFERT, p. 114, Deutsche ent. Zeitschr. Iris xvii.
- E. oliva*, Togo, SUFFERT, p. 112, with subsp. *albula*, p. 113, t. c. **n. sp.**
- Euthalia adona pura* subsp. n., FRUHSTORFER, p. 309, Ins. Börse 1904; *E. lubentina* subsp. n., FRUHSTORFER, pp. 438-351, Stettin Ent. Zeit. lxv.
- Grapta gigantea*, melanic var., OBERTHÜR, p. 174, Bull. Soc. ent. France 1904.
- Hæmatera pyramus* var. n. *rubra*, KAYE, p. 173, pl. xviii, fig. 7, Tr. ent. Soc. London 1904.
- Harma marmorata*, Toro, SHARPE, p. 183, Entomologist 1904, **n. sp.**
- Hypanartia delius nigrescens* subsp. n., SUFFERT, p. 108, Deutsche ent. Zeitschr. Iris xvii.
- Hypolimnas*, African subsp. n., SUFFERT, p. 110, t. c.; *H. bolina*, variation, WATERHOUSE, p. 493, Tr. ent. Soc. London 1904; *H. bolina enganica* subsp. n., FRUHSTORFER, p. 193, Berlin. ent. Zeitschr. xlix; *H. missippus*, bred varr., LEIGH, pp. 689, 690, pl. xxxii, Tr. ent. Soc. London 1904.
- Issoria*, n. subsp. from Malay Arch., FRUHSTORFER, pp. 312-316, Ent. Meddel. ii.
- Kallima rumia amiru* subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- K. rattrayi*, Toro, SHARPE, p. 182, Entomologist 1904, **n. sp.**
- Limenitis populi* varr., SCHULTZ, Abh. Ges. Grolitz xxiv, pp. 135, 136.
- Melitæa dejone* and *parthenie* varr., p. 11, pl. i, figg. 5-8, OBERTHÜR, Études comp. i; *M. didyma* var., ROSTAGNO, p. 169, Boll. Soc. zool. Ital. xiii; *M. iduna* ab. *sulitelmica*, SCHULTZ, p. 137, Abh. Ges. Grolitz xxiv.
- M. tibetana*, pl. ix, fig. 2, Khamba Jong, FAWCETT, p. 135, P. Z. S. 1904, ii, **n. sp.**
- Messaras mimicus*, New Guinea, pl. iii, fig. 43, ROTHSCHILD, p. 318, Nov. Zool. xi, **n. sp.**
- Mimacraea poultoni*, Victoria Nyanza, pl. i, fig. 18, NEAVE, p. 337, Nov. Zool. xi, **n. sp.**
- Neptis conspicua*, pl. i, fig. 15, p. 329, *clarei*, fig. 2, *ochracea*, fig. 5, p. 330, Victoria Nyanza, NEAVE, t. c.; *N. livingstonei*, E. Africa, SUFFERT, p. 126, pl. iii, fig. 10, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**
- Parthenos* subsp. n., FRUHSTORFER (566); *P. sylvia* subsp. n.; FRUHSTORFER, pp. 73, 74, Soc. ent. xix.

- Phyciodes hanhami*, Canada, FLETCHER, p. 122, pl. fig., Canad. Ent. xxxvi, and p. 208, Tr. R. Soc. Canada ix, Sect. 4, **n. sp.**
- Polygonia c-album* var., FUCHS, Jahrb. nassau. Ver. lvii, p. 31, pl. ii, fig. 1.
- Precis*, African subsp. n., SUFFERT, pp. 108, 109, Deutsche ent. Zeitschr. Iris xvii.
- P. adulatorix*, Sumba, FRUHSTORFER, p. 7, SB. Berlin. ent. Zeitschr. xlix, **n. sp.**
- Prothoë ribbei guizonis* subsp. n., ROTHSCILD, p. 366, Nov. Zool. xi.
- Protonotus ochraceus*, egg, KAYE, pl. xvii, fig. 3, p. 178, Tr. ent. Soc. London 1904.
- Pseudacraea hobleyi*, p. 331, *tirikensis*, pl. i, fig. 14, *terra*, p. 332, *obscura*, p. 333, Victoria Nyanza, NEAVE, Nov. Zool. xi, **n. spp.**
- Pyrameis cardui*, swarms, VAN ROSSUM, pp. 112–114, Ent. Ber. Nederland. i ; *P. cardui*, swarms, VAN DEN BERGH & VAN ROSSUM, pp. 148–152, Ent. Ber. Nederland. i ; *P. cardui*, migration, REBEL, p. 152, Ann. Hofmus. Wien xix ; *P. cardui*, migration, Calais, GIARD, p. 67, Feuille Natural. xxxiv ; *P. cardui*, migration, Hungary, AIGNER-ABAFI, pp. 6–9, Allg. Zeitschr. Ent. ix.
- P. indica* var. *vulcania* from Canaries and Madeira, FRUHSTORFER & STICHEL, pp. 3, 4, SB. Berlin. ent. Zeitschr. xlix.
- P. gonerilla*, ALFKEN, pl. xxxii, fig. 11, p. 589, *P. ida*, fig. 12, var. *argentata*, fig. 13, p. 602, Zool. Jahrb. Syst. xix.
- Salamis anacardii ansorgei* subsp. n., ROTHSCILD, p. 452, Nov. Zool. xi.
- S. temora virescens* subsp. n., SUFFERT, p. 109, Deutsche ent. Zeitschr. Iris xvii.
- Symbrenthia* subsp. n., FRUHSTORFER, pp. 319–323, Ent. Meddel. ii.
- Tithorea regalis*, Colombia, STICHEL, p. 18, SB. Berlin. ent. Zeitschr. xlix, **n. sp.**
- Vanessa*, in the Seine-inférieure, NOEL, pp. 143–146, Naturaliste 1904 ; *V. antiopa*, habits, PARKER, Mark Anniversary Volume, pp. 455–469, pl. xxxiii ; *V. antiopa*, pupation habits, FIELD, pp. 6–9, Ent. News Philad. xv ; *V. atalanta*, in New Zealand, PHILPOTT, p. 161, Tr. N. Zealand Inst. xxxvi ; *V. cardui*, migration (as recorded by Eagle Clarke), VAN ROSSUM, pp. 141–143, Ent. Ber. Nederland. i ; *V. urticae*, oviposition, habits, POULTON & HAMM and others, pp. xli–xlvi, P. ent. Soc. London 1904 ; *V. urticae nigricaria* ♂, HAVERKAMPF, p. 186, pl. i, Ann. Soc. ent. Belgique xlviii.

MORPHIDÆ, BRASSOLIDÆ, AMATHUSIIDÆ, DISCOPHORIDÆ.

[Cf. KAYE (775), RÖBER (1180), SHELFORD (1289), STICHEL (1346–1348).]

Brassolinæ revised and listed, STICHEL, Wytsman Gen. Ins. fasc. xx, 48 pp., v pls. In this work numerous varieties are described, that it is not necessary to enumerate here. The forms described in Ins. Börse by the same writer are in this paper redescribed and some of them figured.

Notes on the doubtful species of *Brassolidæ* of Felder and Boisduval, STICHEL, pp. 197 etc., Ins. Börse 1904.

Amathusia, subsp. n., FRUHSTORFER (566).

Amathusidia amythaon lucida subsp. n., FRUHSTORFER, p. 189, Berlin. ent. Zeitschr. xlix.

Brassolis astyra philocala subsp. n., STICHEL, p. 21, Ins. Börse 1904.

Caligo, STICHEL uses numerous names for divisions and subdivisions, *Brassolinæ*, pp. 35–43 ; *C.*, subsp. n., FRUHSTORFER, p. 145, Soc. ent. xviii ; *C. placidianus* var. n. *micans*, *prometheus* var. n. *atlas*, RÖBER,

- p. 146, Soc. ent. xviii; *C.*, notes on, with varr. n., FRUHSTORFER, pp. 313–320, Deutsche ent. Zeitschr. Iris xvi; *C. eurylochus* var. n. *minor*, KAYE, p. 165, Tr. ent. Soc. London 1904; *C. teucer insulanus* subsp. n., STICHEL, p. 21, Ins. Börse 1904.
- C. fruhstorferi*, Honduras, Surinam, STICHEL, p. 21, Ins. Börse 1904; *C. pavo*, p. 145, *hanschi*, Colombia, *phorbas*, p. 146, Ecuador, RÖBER, Soc. ent. xviii; *C. saltus*, Trinidad, KAYE, p. 165, larva, pl. xvii, fig. 1, Tr. ent. Soc. London 1904 : **n. spp.**
- Dasyophthalma* varr. n., STICHEL, p. 21, Ins. Börse 1904.
- Dynastor darius ictericus* subsp. n., STICHEL, p. 21, t. c.
- Hyantide* n. family for *Hyantis* and *Morphopsis*, STICHEL, p. 306, Berlin. ent. Zeitschr. xlix.
- Hyantis*, new forms, STICHEL, pp. 310–313, pl. iv, t. c.
- Morphopsis albertisi*, *astrolabensis* race, STICHEL, p. 308, t. c.
- Narope albopunctum*, Peru, *panniculus*, Paraguay, STICHEL, p. 6, Ins. Börse 1904, **n. spp.**
- Nephrochoria* and *Cyclochoria* **n. nn.** for sects. of *Selenophanes*, STICHEL, p. 29, Brassolinæ.
- Opsiphanes* varr. n., STICHEL, p. 6 and p. 21, t. c.; *O. cassia*, pl. xvii, fig. 2, GUPPY, p. 226, Tr. ent. Soc. London 1904.
- Pseudamathusia masina*, Borneo, FRUHSTORFER, p. 155, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Psilocraspeda*, p. 31, and *Tricothamnodes*, p. 32, **n. nn.** for sects. of *Eryphanis*, STICHEL, Brassolinæ.
- Tenaris artemis*, 9 subsp. n., FRUHSTORFER, p. 389, Ins. Börse 1904; *T. macrops macropina* subsp. n., FRUHSTORFER, p. 26, Soc. ent. xix, *T.*, varr. n., FRUHSTORFER, pp. 129, 139, t. c.
- T. merana*, New Guinea, id. p. 138, t. c. **n. sp.**
- Thaumantis odana* var. n. *cyclops*, RÖBER, p. 105, t. c.

SATYRIDÆ.

- [Cf. BACHMETJEW (69, 71), DYAR (433), FAWCETT (492), KERSHAW (788), OBERTHÜR (987), REBEL (1122), RÖBER (1179), ROTHSCILD (1196), SHELFORD (1289), THIEME (1379, 1380), TUTT (1414).]
- Aphyssoneura pigmentaria* ♀, SUFFERT, p. 132, Deutsche ent. Zeitschr. Iris xvii.
- Argyrophorus lamna*, Bolivia, THIEME, p. 160, Berlin. ent. Zeitschr. xlix, **n. sp.**
- Bia actorion* var. n. *peruana*, RÖBER, p. 106, Soc. ent. xix.
- Cænonympha arcania-insubrica*, p. 24, pl. i, fig. 12, OBERTHÜR, Études comp. i; *C. arcania*, *tiphon* varr., REBEL, p. 174, pl. v, figg. 9–12, Ann. Hofmus. Wien xix; *C. dorus* varr., MUSCHAMP, p. 302, Ent. Rec. xvi; *C. pumphilus* larva, KLOKMAN, p. 134, Ent. Ber. Nederland. i.
- C. mathewi*, Vigo, TUTT, p. 308, Ent. Rec. xvi, **n. sp.**
- Epinephele*, abb. of Tuscan, VERITY, p. 56, Entomologist 1904; *E. jurtina*, number of eye-spots and damp seasons, BACHMETJEW, pp. 143–147, Allg. Zeitschr. Ent. ix; *E. furtina* (sic) varr., HAVERKAMPE, p. 188, Ann. Soc. ent. Belgique xlvi; *E. jurtina*, parthenogenesis of male, BACHMETJEW, pp. 1–16, Horæ Soc. ent. Ross. xxxvii; *E. lycaon* ab. n. *biocellatus*, RAGUSA, pl. iii, fig. 2, p. 110, Natural. Sicil. xvii; *E. tithonus* varr., cuts, var. n. *albida*, RUSSELL, pp. 125–127, Entomologist 1904.
- Erebia christi* and *pharte* varr., OBERTHÜR, pp. 21–23, pl. ii, figg. 13, 14, 19, 20, and iv, fig. 45, Études comp. i; *E. neoridas* varr. n. *alborittata*, *etrusca*, pl. iv, figg. 6, 7, VERITY, p. 55, Entomologist 1904; *E. manto* var. n. *ocellata*, WAGNER, p. 610, cut, Verh. Ges. Wien liv; *E. evias* and *stygne*, varr. from Guadarrama, *E. penalaræ* var. n., CHAPMAN,

- pp. xlvi–xlvi, P. ent. Soc. London 1904; *E. stygne* and *epistygne*, note, NICHOLL, p. 48, Ent. Rec. xvi; *E. flavofasciata* var. n. *thiemei*, BARTEL, p. 165, Deutsche ent. Zeitschr. Iris xvii; *E. turanica* var. n. *jucunda*, PÜNGELER, p. 286, pl. vi, fig. 1, Deutsche ent. Zeitschr. Iris xvi; *E. glacialis*, larva, KRODEL, pp. 442–447, Allg. Zeitschr. Ent. ix.
- E. palarica*, N. Spain, CHAPMAN, p. lxxxvii, P. ent. Soc. London 1904, **n. sp.**
- Erites thetis*, Borneo, SHELFORD, p. 99, J. Straits Asiat. Soc. xli, **n. sp.**
- Heteronympha merope*, *philerope*, variation, KERSHAW, pp. 173–175, Victorian Natural. xx.
- H. solandri*, Australia, WATERHOUSE, p. 466, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Lethe cerama*, Borneo, SHELFORD, p. 96, J. Straits Asiat. Soc. xli, **n. sp.**
- Lymanopoda acraeida* Butl. ♀, THIEME, p. 160, Berlin. ent. Zeitschr. xlix.
- L. sororcula*, Ecuador, p. 161, *palumba*, Bolivia, p. 462, THIEME, t. c. **n. spp.**
- Melanitis ismene*, variation, GREEN, p. 75, pl., Spolia Zeylan. ii.
- M. ansorgei*, Aruwimi Forest, ROTHSCHILD, p. 451, Nov. Zool. xi, **n. sp.**
- Mycalesis barbara mea* subsp. n., pl. iii, fig. 42, p. 319, ROTHSCHILD, t. c.
- Æneis norna*, variation, var. n., SCHULTZ, pp. 138–140, Abh. Ges. Grolitz xxiv; *O. caryi* n. var., DYAR, p. 142, P. ent. Soc. Washington vi.
- Æ. nahanni*, Mackenzie, id. t. c. **n. sp.**
- Pararge megacra*, larva, KLOKMAN, p. 134, Ent. Ber. Nederland. i.
- Ragadia simplex*, pl. ix, fig. 1, p. 135, FAWCETT, P. Z. S. 1904, ii.
- Satyrus semele* ab. n. *triocellatus*, RAGUSA, pl. iii, fig. 1, p. 109, Natural. Sicil. xvii; *S. hermione*, larva, TER HAAR, p. 160, Ent. Ber. Nederland. i.
- Tisiphone abeona* var. n. *albifascia*, WATERHOUSE, p. 468, P. Linn. Soc. N. S. Wales xxix.
- Ypthima abnormis*, Borneo, SHELFORD, p. 98, J. Straits Asiat. Soc. xli, **n. sp.**

ERYCINIDÆ (or RIODINIDÆ), [s. l. incl. ELYMNIAS, etc.]

[Cf. BETHUNE-BAKER (116), DANNATT (351), DRUCE (405), FRUHSTORFER (571), KAYE (775), LATHY (859, 861), RÖBER (1179), ROTHSCHILD (1194, 1197).]

- Abisara albiplaga avara*, pl. ii, fig. 23, subsp. n. *keiana*, fig. 24, subsp. n. *weiskei* ♀, pl. iii, fig. 28, ROTHSCHILD, p. 317, Nov. Zool. xi; *Abisara* subsp. n., FRUHSTORFER (566).
- A. segestes*, New Guinea, ROTHSCHILD, p. 455, Nov. Zool. xi, **n. sp.**
- Aricoris striata*, Ecuador, pl. xxxiv, fig. 12, p. 488, DRUCE, P. Z. S. 1904, i, **n. sp.**
- Calvia fulvimargo*, Peru, LATHY, p. 466, pl. xxvii, fig. 6, T. ent. Soc. London 1904, **n. sp.**
- Chamælinnas albivitta*, Brazil, LATHY, p. 465, pl. xxvii, fig. 5, t. c. **n. sp.**
- Charis candiope*, Colombia, pl. xxxiv, fig. 5, *mandosa*, Rio Janeiro, fig. 6, *myrtis*, Paraguay, figg. 6, 7, p. 486, DRUCE, P. Z. S. 1904, i, **n. spp.**
- Cremna aza*, Colombia, pl. xxxiii, fig. 11, DRUCE, t. c. **n. sp.**
- Cricosoma coccineata*, Trinidad, pl. xviii, fig. 10, p. 185, KAYE, Tr. ent. Soc. London 1904, **n. sp.**
- Dicallaneura amabilis*, New Guinea, pl. ii, figg. 21, 22, ROTHSCHILD, p. 318, Nov. Zool. xi; *D. ekeikei*, New Guinea, BETHUNE-BAKER, p. 370, Nov. Zool. xi; *D. milnei*, New Guinea, FRUHSTORFER, p. 147, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**
- Elymnias esaca*, subspecies, synonymy, SHELFORD & BINGHAM, pp. 487–489, Tr. ent. Soc. London 1904; *E.*, subsp. n., FRUHSTORFER, pp. 321–323, Deutsche ent. Zeitschr. Iris xvi; *E.*, subsp. n., FRUHSTORFER, pp. 53 & 60, Soc. ent. xix.

- E. thyone*, Celebes, id. p. 53; *E. brookei*, Borneo, SHELFORD, p. 102, J. Straits Asiat. Soc. xli : **n. spp.**
- Emesis guppyi*, Trinidad, pl. xviii, fig. 9, p. 187, KAYE, Tr. ent. Soc. London 1904, **n. sp.**
- Erycina latifasciata*, Peru, LATHY, pl. xxvii, fig. 3, p. 464, Tr. ent. Soc. London 1904; *E. mendita*, Bolivia, pl. xxxiv, fig. 2, p. 485, DRUCE, P. Z. S. 1904, i : **n. spp.**
- Eurybia cerulescens*, pl. xxxiii, fig. 3, *sinuaces*, fig. 4, Peru, DRUCE, p. 482, t. c. **n. spp.**
- Eurygona ocalea*, Bolivia, pl. xxxiii, fig. 1, *candaria*, Colombia, fig. 2, p. 481, DRUCE, t. c.; *E. subargentea*, Bogota, LATHY, p. 463, pl. xxvii, fig. 1, Tr. ent. Soc. London 1904 : **n. spp.**
- Helicopsis elegans*, Trinidad, KAYE, p. 182, pl. xviii, fig. 6, Tr. ent. Soc. London 1904, **n. sp.**
- Ithomiola rubrolineata* (= *celtilla* var. Hew.). Peru, LATHY, p. 465, Tr. ent. Soc. London 1904, **n. sp.**
- Lemonias auria*, Bolivia, pl. xxxiv, fig. 4, p. 487, DRUCE, P. Z. S. 1904, i; *L. pulchra*, Peru, LATHY, p. 467, pl. xxvii, fig. 8, Tr. ent. Soc. London 1904 : **n. spp.**
- Libythea fulvescens*, Dominica, LATHY, p. 451, P. Z. S. 1904, i, **n. sp.**
- Lymnas hillapana*, Peru, RÖBER, p. 106, Soc. ent. xix, **n. sp.**
- Mesosemia axilla*, Bolivia, pl. xxxiii, fig. 5, *anica*, fig. 6, *paramba*, fig. 7, p. 483, *candara*, fig. 8, *carderi*, fig. 9, p. 484, Peru, *parishi*, Brit. Guiana, fig. 10, p. 485, DRUCE, P. Z. S. 1904, i; *M. elegans*, Peru, LATHY, p. 463, pl. xxvii, fig. 2, Tr. ent. Soc. London 1904 : **n. spp.**
- Monethe johnstoni*, Brit. Guiana, DANNATT, p. 174, pl. vii, fig. 2, Entomologist 1904, **n. sp.**
- Nymphidium molpe*, larva, GUPPY, p. 227, Tr. ent. Soc. London 1904.
- N. candace*, pl. xxxiv, fig. 1, Rio Janeiro, *minuta*, Brit. Guiana, fig. 10, p. 487, *augea*, Bolivia, fig. 11, *medusa*, Peru, fig. 3, p. 488, DRUCE, P. Z. S. 1904; *N. completa*, Peru, LATHY, p. 467, pl. xxvii, fig. 9, Tr. ent. Soc. London 1904 : **n. spp.**
- Rusalkia marathon* var. *n. stenotaenia*, RÖBER, p. 106, Soc. ent. xix.
- Siseme peculiaris*, Peru, pl. xxxiv, fig. 9, p. 486, DRUCE, P. Z. S. 1904, i, **n. sp.**
- Stalactis canidia*, Matto Grosso, pl. xxxiv, fig. 8, p. 488, DRUCE, t. c. **n. sp.**
- Symmachia peruviana*, La Merced, LATHY, p. 466, pl. xxvii, fig. 7, Tr. ent. Soc. London 1904, **n. sp.**
- Synargis* Hübn. valid, KAYE, p. 189, Tr. ent. Soc. London 1904.
- Themone trivittata*, Peru, LATHY, p. 465, pl. xxvii, fig. 4, Tr. ent. Soc. London 1904, **n. sp.**
- Theope eudocia*, larva, pl. xviii, fig. 1, p. 226, *foliorum*, larva, fig. 2, p. 227, GUPPY, Tr. ent. Soc. London 1904.
- T. fasciata*, hab. ?, LATHY, p. 467, pl. xxvii, fig. 10, Tr. ent. Soc. London 1904, **n. sp.**

LYCÆNIDÆ.

[Cf. BETHUNE-BAKER (116–118), CATOR (250), DRUCE (407, 408), DYAR (422), FLETCHER (515, 516), KAYE (775), KRODEL (846), LATHY (861), NEAVE (977), OBERTHÜR (987), SHARPE (1286, 1288), SKINNER (1303), SUFFERT (1353, 1355), TRIMEN (1394), WATERHOUSE & TURNER (1495).]

For suggestive and synonymical notes on Australian *Lycænidae* see WATERHOUSE & TURNER, P. Linn. Soc. N. S. Wales 1904, pp. 798–804.

Temperature experiments on pupa of *L. corydon* and *damon*, KRODEL, pp. 49–55, 21 cuts, Allg. Zeitschr. Ent. ix.

- Alæna rollei*, E. Africa, SUFFERT, p. 134, Ins. Börse 1904; *A. rollei*, Usambara, SUFFERT, p. 39, pl. i, fig. 5, Deutsche ent. Zeitschr. Iris xvii; *A. mulsa*, E. Africa, n. sp., but in note = *rollei* Suff., THIEME, p. 164, Berlin. ent. Zeitschr. xlix : **n. sp.**
- Aphneus drucei*, Victoria Nyanza, pl. i, fig. 6, p. 338, NEAVE, Nov. Zool. xi; *A. ratrayi*, Toro, SHARPE, p. 203, Entomologist 1904 : **n. spp.**
- Arawacus* **n. g.** for *Pap. linus* Sulz, KAYE, p. 197, Tr. ent. Soc. London 1904.
- Arhopala halmaheira*, Halmaheira, p. 233, *sublustris*, p. 234, *baluensis*, p. 235, Borneo, BETHUNE-BAKER, Ann. Nat. Hist. xiv, **n. spp.**
- Candalides pruina*, New Guinea, DRUCE, p. 140, Ann. Nat. Hist. xiii, **n. sp.**
- Castalius eusemia*, Victoria Nyanza, pl. i, fig. 11, p. 340, NEAVE, Nov. Zool. xi, **n. sp.**
- Catochrysops nandensis*, Africa, pl. i, fig. 12, p. 339, NEAVE, t. c. **n. sp.**
- Chrysophanus dispar* var. pl. iv, fig. 12, and ab. n. *nigrolineata*, p. 57, *dorilis* ab. n. *upoleuca*, p. 58, VERITY, Entomologist 1904; *C. gorgon*, eggs, larvæ, GRUNDEL, p. 97, Ent. News Philad. xv.
- Cupido malathana* var. n. *nilotica*, AURIVILLIUS, p. 3, Jägerskiöld exp. No. 8.
- Cyaniris ladon*, food-plant, FLETCHER, p. 4, Canad. Ent. xxvi.
- Deudorix leonina*, Sierra Leone, BETHUNE-BAKER, p. 231, Ann. Nat. Hist. xiv; *D. angelita*, Cameroons, SUFFERT, p. 54, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**
- Eoöxyliodes tharis enganicus* subsp. n., FRUHSTORFER, p. 204, Berlin. ent. Zeitschr. xlix; *E. tharis* subspp. n., FRUHSTORFER, pp. 311, 312, Deutsche ent. Zeitschr. Iris xvi.
- Epitola mus, mercedes*, p. 53, *concepcion*, p. 54, Cameroons, SUFFERT, t. c. xvii, **n. spp.**
- Epitolina catori, dorothea* = (*Phytala leonina*), p. 227, *sublustris*, p. 228, *kholifa*, p. 229, *albomaculata, virginea*, p. 230, Sierra Leone, BETHUNE-BAKER, Ann. Nat. Hist. xiv, **n. spp.**
- Hypolycæna cæculus obscurus* subsp. n., SUFFERT, p. 60, Deutsche ent. Zeitschr. Iris xvii.
- H. dolores*, E. Africa, SUFFERT, p. 57, t. c.; *H. ugandæ*, Africa, SHARPE, p. 203, Entomologist 1904; *H. moyambina*, Sierra Leone, BETHUNE-BAKER, p. 232, Ann. Nat. Hist. xiv : **n. spp.**
- Iaspis* **n. g.** for *Symmachia temesa*, Hew., KAYE, p. 196, Tr. ent. Soc. London 1904.
- Incisalia angustus*, larva, COOK, p. 136, Canad. Ent. xxxvi.
- Iolaus silas lasius* subsp. n., SUFFERT, p. 70, Deutsche ent. Zeitschr. Iris xvii.
- I. barbara*, p. 62, *matilda*, p. 64, *elisa*, p. 65, *bertha*, p. 66, *thuraii*, p. 67, *emma*, p. 69, Africa, SUFFERT, t. c.; *I. hemicyanus*, Uganda, p. 203, *albomaculatus*, Toro, p. 204, SHARPE, Entomologist 1904; *I. catori*, Sierra Leone, BETHUNE-BAKER, p. 233, Ann. Nat. Hist. xiv : **n. spp.**
- Jacoona anasuja* varr., FRUHSTORFER, p. 310, Deutsche ent. Zeitschr. Iris xvi.
- Lampides telicanus*, ab. n. p. 58, *damon* ab. n. *agraphomena*, p. 59, VERITY, Entomologist 1904.
- Larinopoda lagyra gyrata* subsp. n., SUFFERT, p. 49, Deutsche ent. Zeitschr. Iris xvii.
- L. emilia*, Cameroons, SUFFERT, p. 48, t. c. **n. sp.**
- Liptena angusta*, p. 50, *margarita*, p. 51, Cameroons, SUFFERT, t. c.; *L. albicans*, Sierra Leone, CATOR, p. 76, Ann. Nat. Hist. xiii; *L. diversa*, Sierra Leone, BETHUNE-BAKER, p. 225, Ann. Nat. Hist. xiv : **n. spp.**
- Lycæna ariana* var. *arene*, pl. ix, fig. 4, p. 137, *L. pheretes* var. *pharis*, fig. 5, p. 138, FAWCETT, P. Z. S. 1904, ii; *L. pseudargiolus* varr. n. *argentata, nigrescens*, FLETCHER, p. 213, Tr. R. Soc. Canad. ix, Sect. 4;

- L. pseudargiolus* varr. n. *argentata*, *nigrescens*, FLETCHER, p. 127, Canad. Ent. xxxvi; *L. cyllarus* var. n. *punctata*, GOUIN, pp. lxxi & lxxvi, Pr.-verb. Soc. Linn. Bordeaux lix; *L. arion* var. n., WAGNER, p. 1, Soc. ent. xix; *L. icarus* ab. *celina*, *escheri* ab. *rostagni*, *corydon* ab. *striata*, STEFANELLI, pp. 4, 5, Bull. Soc. ent. Ital. xxxvi; *L. escheri* var. n. *splendens*, id. t. c. p. 11; *L. corydon* ab. n. *stefanellii*, *L. bellargus* ab. n. *bellargoides*, VERITY, l. eod.; *L. zephyrus*, *calliopis* varr. pp. 16–19, pl. ii, figg. 15–18 & 21–24, Études comp. i; *L. coretus*, characters, JACHONTOV, pp. 96–100, cuts, and p. 218, Rev. Russe Ent. iv; *L. argiades*, life-history, FROHAWK, pp. 245–249, Entomologist 1904; *L. alcon*, habits and early stages, BRANTS, pp. 137–143, Tijdschr. Ent. xlv.
- L. leurothodi*, Basutoland, TRIMEN, p. 242, pl. xix, fig. 6, Tr. ent. Soc. London 1904; *L. (Zizera) zera*, pl. ix, fig. 6, p. 138, *L. (Niphanda) marcia*, fig. 7, p. 139, Tounghoo, FAWCETT, P. Z. S. 1904, ii: n. spp.
- Lycenesthes affinis* n. n. for *modestus* Waterh., WATERHOUSE & TURNER, p. 801, P. Linn. Soc. N. S. Wales 1904.
- L. hobleyi*, Victoria Nyanza, NEAVE, p. 339, Nov. Zool. xi, n. sp.
- Macusia* n. g. for *Thecla satyroides* Hew., KAYE, p. 198, Tr. ent. Soc. London 1904.
- Micropentila mabangi*, Sierra Leone, BETHUNE-BAKER, p. 226, Ann. Nat. Hist. xiv, n. sp.
- Neolucia* n. g. type *Lycena agricola* Westw., WATERHOUSE & TURNER, p. 803, P. Linn. Soc. N. S. Wales 1904.
- Nesolyceus* n. g. type *Holochila albosericea* Misk., WATERHOUSE & TURNER, t. c. p. 801.
- Oxylides feminina*, Uganda, SHARPE, p. 202, Entomologist 1904, n. sp.
- Paivarria* n. g. for *Pap. venulius* Cr., KAYE, p. 199, Tr. ent. Soc. London 1904.
- Parachrysops* n. g. *bicolor* n. sp., New Guinea, BETHUNE-BAKER, p. 369, Nov. Zool. xi.
- Paralucia* n. g. type *L. pyrodiscus* Ros., WATERHOUSE & TURNER, p. 802, P. Linn. Soc. N. S. Wales 1904.
- Paraphnceus* n. g. for *Aphnceus hutchinsoni*, THIERRY-MIEG, p. 140, Naturaliste 1904.
- Parelodina* n. g. near *Candalides*, *P. aroa* n. sp., New Guinea, BETHUNE-BAKER, p. 368, Nov. Zool. xi.
- Pentila*, subsp. n., SUFFERT, pp. 46, 47, Deutsche ent. Zeitschr. Iris xvii.
- P. hedwiga*, *marianna*, p. 43, *christina*, p. 45, *elfrieda*, p. 46, Africa, SUFFERT, t. c. n. spp.
- Philiris* merged in *Candalides*, BETHUNE-BAKER, p. 369, Nov. Zool. xi.
- Polyniphes* n. g. for *Thecla dumenilii* God., KAYE, p. 191, Tr. ent. Soc. London 1904.
- Polyommatus admetus rippartii*, oviposition and egg, POWELL, pp. 92–94, Ent. Rec. xvi.
- Poultonia* n. g. near *Durbania*, *P. ochraceus* n. sp., Victoria Nyanza, pl. i, fig. 13, NEAVE, p. 336, Nov. Zool. xi.
- Purlisa gigantea borneana* subsp. n., FRUHSTORFER, p. 310, Deutsche ent. Zeitschr. Iris xvi.
- Pseuderesia moyambina*, p. 224, *catori*, p. 225, Sierra Leone, BETHUNE-BAKER, Ann. Nat. Hist. xiv; *P. bakeriana*, p. 73, *nigra*, p. 74, *fusca*, p. 75, Sierra Leone, CATOR, Ann. Nat. Hist. xiii; *P. carlota*, Cameroons, SUFFERT, p. 47, Deutsche ent. Zeitschr. Iris xvii.
- Rekoa* n. g. for *Pap. meton* Cr., KAYE, p. 198, Tr. ent. Soc. London 1904.
- Siderus* n. g. *S. parvnotus* n. sp., Trinidad, KAYE, p. 195, t. c.
- Spindasis nairobiensis*, Africa equat., SHARPE, p. 133, Entomologist 1904, n. sp.

- Stugeta maria*, Angola, SUFFERT, p. 60, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Syntaruchoides* **n. g.** for *Papilio cassius* Cr., KAYE, p. 190, Tr. ent. Soc. London 1904.
- Tajuria lucullus, stigmata*, Borneo, DRUCE, p. 141, Ann. Nat. Hist. xiii, **n. spp.**
- Talicauda nyseus* var., GREEN, p. 77, Spolia Zeylan. ii.
- Telipna acraea nigra* subsp. n., SUFFERT, p. 42, Deutsche ent. Zeitschr. Iris xvii.
- T. erica*, Cameroons, SUFFERT, p. 41, t. c.; *T. nyanza*, Africa, pl. i, fig. 19, p. 335, NEAVE, Nov. Zool. xi : **n. spp.**
- Thamala* etc., Indo-Australian subspp. n., FRUHSTORFER (566).
- Thecla strigosa* var. n. *liparops*, FLETCHER, p. 124, cuts, Canad. Ent. xxxvi, and FLETCHER, p. 210, Tr. R. Soc. Canad. ix, sect. 4; *T. critola*, sexes, DYAR, p. 39, J. N. York Ent. Soc. xii; *T. acaciæ* ab. n. *beccarii*, pl. iv, fig. 11, p. 56, VERITY, Entomologist 1904.
- T. oslari*, Arizona, DYAR, p. 40, J. N. York Ent. Soc. xii; *T. heathii*, Manitoba, FLETCHER, p. 125, Canad. Ent. xxxvi, and FLETCHER, p. 212, Tr. R. Soc. Canada ix, sect. 4; *T. johnsoni*, Brit. Columbia, SKINNER, p. 298, Ent. News Philad. xv; *T. subobscura, dominicana*, Dominica, LATHY, p. 452, P. Z. S. 1904, i : **n. spp.**
- Thestor ballus*, early stages, CHAPMAN, p. 254-260, 277-284, pls. xi-xiii, Ent. Rec. xvi.
- Thysonotis hebes*, New Guinea, DRUCE, p. 140, Ann. Nat. Hist. xiii, **n. sp.**
- Tmolus unilinea*, p. 192, *perdistincta*, p. 194, pl. xviii, fig. 8, Trinidad, KAYE, Tr. ent. Soc. London 1904, **n. spp.**
- Zeritis thysbe* var. pl. xix, fig. 3, p. 236, *Z. molomo* redescribed, p. 238, fig. 4, *Z. damarensis*, fig. 5, p. 240, TRIMEN, Tr. ent. Soc. London 1904.
- Z. felthami*, Cape G. H., TRIMEN, p. 233, pl. xix, fig. 2, t. c. **n. sp.**
- Zizera otis* var., GREEN, p. 77, cut, Spolia Zeylan. ii.

HESPERIIDÆ.

[Cf. DYAR (420, 422), FLETCHER (515, 516), FRUHSTORFER (568), GRINNELL (634), KAYE (775), MABILLE (898), NEAVE (977), SWINHÖE (1364), TRIMEN (1394), WATERHOUSE (1493).]

WATERHOUSE (1493) criticises Mabille's work regarding Australian *Hesperiidæ*, and gives a list of corrigenda as to habitats and synonymy, for which reference must be made to the paper itself.

- Acromecis* **n. g.** *neander* Plötz, MABILLE, p. 171, Hesperiidæ.
- Aella* **n. g.** *dryops* Mab., MABILLE, p. 140, Hesperiidæ.
- Arotis* **n. g.** *strene* **n. sp.**, Brazil, MABILLE, p. 151, Hesperiidæ.
- Asbolis* **n. g.** *sandarac* H.-Sch., MABILLE, p. 134, Hesperiidæ.
- Bibla* **n. g.** near *Taractrocera*, MABILLE, p. 122, Hesperiidæ.
- Chloeria* **n. g.** *psittacina* Feld., MABILLE, p. 178, Hesperiidæ.
- Chondrolepis* **n. g.** *murga* Mab., MABILLE, p. 170, Hesperiidæ.
- Corone oceanica*, Oceania, *tenebricosa*, New Guinea, MABILLE, p. 143, Hesperiidæ, **n. spp.**
- Cyclopides trisignatus*, Victoria Nyanza, pl. i, fig. 8, p. 343, NEAVE, Nov. Zool. xi, **n. sp.**
- Dalla* **n. g.** for part of *Butleria*, Wats., MABILLE, p. 107, Hesperiidæ.
- Hasora attenuata*, New Guinea, MABILLE, p. 86, Hesperiidæ, **n. sp.**
- Heliopetes concinnata*, Brazil, MABILLE, p. 79, Hesperiidæ, **n. sp.**
- Ismene tolo*, Celebes, MABILLE, p. 89, Hesperiidæ, **n. sp.**
- Kedestes tacusa*, pl. xx, fig. 8, p. 245, TRIMEN, Tr. ent. Soc. London 1904.
- Leptalina* **n. g.** near *Heteropterus*, MABILLE, p. 110, Hesperiidæ.

- Malaza* **n. g.** *carmides* Hew., MABILLE, p. 95, Hesperiidæ.
Manarina **n. g.** *empyreus* Mab., MABILLE, p. 95, Hesperiidæ.
Melanthes **n. g.** *for brunnea* H.-Sch., MABILLE, p. 80, Hesperiidæ.
Ocybadistes suffusus, Australia, MABILLE, p. 142, Hesperiidæ, **n. sp.**
Edaloneura **n. g.** *heterochrus* Mab., MABILLE, p. 101, Hesperiidæ.
Enides **n. g.** *vulpina* Feld., MABILLE, p. 178, Hesperiidæ.
Ocytozia **n. g.** *doubledayi* Westw., MABILLE, p. 93, Hesperiidæ.
Padraona suborbicularis, Australia, MABILLE, p. 141, Hesperiidæ, **n. sp.**
Pamphila manitoboides, Canada, FLETCHER, p. 128, Canad. Ent. xxxvi, and FLETCHER, p. 214, Tr. R. Soc. Canada ix, sect. 4, **n. sp.**
Parnara nostrodamus, habits, egg and larva, VÉRITY, p. 233, Bull. Soc. ent. France 1904.
Perichares heroni, Trinidad, KAYE, p. 221, Tr. ent. Soc. London 1904, **n. sp.**
Psoralis **n. g.** *sabæus* **n. sp.**, Bolivia, MABILLE, p. 133, Hesperiidæ.
Pyrrhochalcia **n. g.** *iphis* Drury, MABILLE, p. 89, Hesperiidæ.
Sarega **n. g.** *staurus* **n. sp.**, Colombia, MABILLE, p. 133, Hesperiidæ.
Serdis **n. g.** *flagrans* **n. sp.**, Ecuador, MABILLE, p. 144, Hesperiidæ.
Staphylus sinepunctis, Trinidad, KAYE, p. 215, Tr. ent. Soc. London 1904, **n. sp.**
Stomyles gallio, *pupillatus*, S. America, MABILLE, p. 132, Hesperiidæ **n. spp.**
Synale **n. g.** *hylaspes* Cr., MABILLE, p. 159, Hesperiidæ.
Synapte **n. g.** *salenus* Mab., MABILLE, p. 133, Hesperiidæ.
Tagiades bubasa, N. Guinea, p. 418, *hovia*, Shortland islds., Sivoa, N. Guinea, p. 419, SWINHOE, Ann. Nat. Hist. xiv, **n. spp.**
Telicota insularis kreon subsp. n., FRUHSTORFER, p. 166, Berlin. ent. Zeitschr. xlix.
*T. androsthene*s, Lompa Battan, FRUHSTORFER, p. 165, pl. i, fig. 6, t. c.;
T. hypomelæna, New Guinea, MABILLE, p. 148, Hesperiidæ : **n. spp.**
Thanaos lilius, Brit. Columbia, DYAR, p. 788, P. U. S. Mus. xxvii ; *T. callidus*, S. California, GRINNELL, p. 114, Ent. News Philad. xv : **n. spp.**
Thorybes mysie, Arizona, DYAR, p. 40, J. N. York Ent. Soc. xii, **n. sp.**
Thracides joannisii, Chiriqui, *phidonides*, Ecuador, MABILLE, p. 179, Hesperiidæ, **n. spp.**
Triadusa **n. g.** *milvius* **n. sp.**, Brazil, MABILLE, p. 144, Hesperiidæ.
Vehilius subplanus, Trinidad, KAYE, p. 216, Tr. ent. Soc. London 1904, **n. sp.**
Zenida **n. g.** *abdon* Plötz, MABILLE, p. 160, Hesperiidæ.
Zophopetes **n. g.** *dysmephila* Tr., MABILLE, p. 183, Hesperiidæ.

HETEROCERA.

Corrections of nomenclature etc. in Holland's moth book, Canad. Ent. xxxvi, pp. 25 etc. : and also in Ent. News Philad. xv, pp. 104-106 etc.

CASTNIIDÆ (Vacant) and SPHINGIDÆ.

[Cf. DYAR (420), GRIEP (629), HAMPSON (654), KUSNEZOV (849), OBERTHÜR (987-989) ROTHSCILD (1195), TUTT (1413), WEBSTER (1500).]

TUTT's Vol. iv of British *Lepidoptera* is devoted to *Sphingidæ* and includes a catalogue of palæarctic forms.

TUTT, Ent. Rec. xvi, pp. 5 etc., etc., reviews Rothschild's and Jordan's work of last year, making many remarks on classification and nomenclature.

Review of ROTHSCILD & JORDAN's monograph, SEITZ, pp. 324-330, Deutsche ent. Zeitschr. Iris xvi.

- Variation, geographical distribution and antiquity with special reference to *Smerinthus*, GRIEP, pp. 89–129, plate, Helios xxi.
- Distribution in North America, WEBSTER, pp. 65–69, Canad. Ent. xxxvi.
- Descriptive notes on Japanese *Sphingideæ* with figg. of larvæ, NAGANO, Insect World, Vols. vii, viii.
- Development of ocellated spots, larva of *Deilephila nerii*, and *Pergesa porcellus*, KUSNEZOV, Rev. Russe Ent. iv, pp. 154–162, cuts.
- Acanthosphinx gussfeldti*, larva and pupa, AURIVILLIUS, p. 43, Arkiv Zool. ii, No. 4.
- Celerio*, varr. and hybrids of European, pp. 26–42, pls. v and vi, OBERTHÜR, Études comp. i.
- Daphnis nerii*, larva and pupa, DOLLMAN, p. 37, pl. i, Ent. Rec. xvi.
- Deilephila livornica lineata* in Algeria, larvæ variation, GIARD, pp. 203–206, Bull. Soc. ent. France 1904.
- Epistor boisduvali* (= *camertus* Boisd. nec Cr.), OBERTHÜR, p. 77, Bull. Soc. ent. France 1904; *E. bathus*, Peru, ROTHSCILD, p. 436, Nov. Zool. xi: **n. spp.**
- Hemaris diffinis thetis*, early stages, DYAR, p. 788, P. U. S. Mus. xxvii.
- Lepchina* **n. g.** near *Acosmeryx*, *L. tridens* **n. sp.**, Darjeeling, OBERTHÜR, p. 76, Bull. Soc. ent. France 1904.
- Lepisesia flavofasciata*, early stages, DYAR, p. 790, P. U. S. Mus. xxvii.
- Macroglossum augavra*, New Guinea, ROTHSCILD, p. 438, Nov. Zool. xi, **n. sp.**
- Manduca atropos* varr., BURROWS, p. 137, pl. iii, Ent. Rec. xvi.
- Marumba nympa* ♂, pl. D, fig. 17, p. 640, HAMPSON, J. Bombay Soc. xv.
- Nephele discifera* f. *rattrayi* nov., ROTHSCILD, p. 436, Nov. Zool. xi.
- Polyptychus murinus*, Congo, ROTHSCILD, p. 435, t. c. **n. sp.**
- Rhagastis jordani*, Siao-Lou, C. OBERTHÜR, p. 14, Bull. Soc. ent. France 1904, **n. sp.**
- Smerinthus*, a gynandromorphic hybrid, GILLMER, p. 140, Allg. Zeitschr. Ent. ix; *S. ocellatus* and *populi*, hybridisation, ARKLE, p. 25, Entomologist 1904; *S. tremula*, note, SLEVOGT, p. 19, Soc. ent. xix.
- Sphingonæpiopsis ansorgeri*, Angola, ROTHSCILD, p. 438, Nov. Zool. xi, **n. sp.**
- Temnora elegans polia* subsp. n., ROTHSCILD, p. 437, t. c.
- T. albilinea*, Angola, p. 436, *rattrayi*, Uganda, p. 437, ROTHSCILD, t. c. **n. spp.**
- Theretra polistratus*, New Guinea, ROTHSCILD, p. 440, t. c. **n. sp.**
- Xylophanes ockendeni*, p. 439, *rhodotus*, p. 440, Peru, ROTHSCILD, t. c.; *P. nabuchodonosor*, Bolivia, OBERTHÜR, p. 78, Bull. Soc. ent. France 1904: **n. spp.**

SESIIDÆ.

- Bembecia marginata* var. *albicoma*, ENGEL, p. 68, Ent. News Philad. xv.
- Parharmonica picea*, Washington, DYAR, p. 106, P. ent. Soc. Washington vi, **n. sp.**
- Sesia doryliformis* ab. n. *unicolor*, RAGUSA, p. 114, Nat. Sicil. xvii; *S. typhiceformis*, gall?, TROTTER, p. 83, Marcellia iii; *S. acerni*, habits, ENGEL, p. 71, Ent. News Philad. xv.
- S. jakuta*, Lena, HERZ, p. 19, Ofv. Finska Forh. xlv, No. 15, **n. sp.**

BOMBYCES

(*s. l.*, including CHALCOSIIDÆ, PSYCHIDÆ, HEPIALIDÆ, COSSIDÆ, AGARISTIDÆ, and various families of more or less doubtful position. *Uraniidæ* and *Epiplemidæ*, see GEOMETRIDÆ; *Cymatophoridæ*, see GEOMETRIDÆ; *Thyrididæ*, see PYRALIDÆ).*

[Cf. AURIVILLIUS (60, 62), BARNES (88), BARTEL (90), BETHUNE-BAKER (116), CHAPMAN (259), DEEGENER & SCHAPOSCHNIKOW (359), DOGNIN (398–401), DRUCE (406), DYAR (422, 427, 428, 431, 432, 435), FEDERLEY (493), HAMPSON (653, 654), HEYLAERTS (682), HEYN (685), JOANNIS (763), JORDAN (771), LITTLER (885), MARSHALL (916), OBERTHÜR (987), PACKARD (1007), PETERSEN (1034), PIEPERS & SNELLEN (1084, 1085), PÜNGELER (1111), REBEL (1121), ROTHSCILD (1194, 1198), SCHAUS (1225), STEBBING (1337), SWINHOE (1361, 1363, 1364), TSCHET-VERIKOV (1400), TURNER (1411, 1412), WARREN (1475).]

Synbombycina n. superfam. for *Brahmaeide*, *Bombycide*, *Endromide*, *Lasiocampide*, *Liparide* and *Eupterotide*, PACKARD, P. Amer. Ac. xxxix, p. 578.

Classification of *Saturniide*, AURIVILLIUS, pp. 15–27, with synopsis of larvæ and pupæ, Arkiv Zool. ii, No. 4.

Cosside, notes on characters, on larval tubercles and on position of *Culama expressa*, QUAIL, pp. 93–97, pl. v, Entomologist 1904.

Australian *Lymantriidæ*, in which is included *Aganaidæ*, TURNER, pp. 469–481, Tr. ent. Soc. London 1904.

The *Syntomide* of Java, with descriptions of larvæ, PIEPERS & SNELLEN, pp. 43–62, Tijdschr. Ent. xlvii.

The vegetable caterpillar, *Cordyceps* and *Hepialidæ*, KIRBY, Nature lxx, p. 44.

Acatapauustus n. g. *Noline*, *A. basifusca*, pl. vi, fig. 25, p. 415, *ckeikei* fig. 20, p. 416, n. spp., New Guinea, BETHUNE-BAKER, Nov. Zool. xi.

Acco n. g. *Lithosiine*, *A. bicolora*, pl. v, fig. 21, n. sp., New Guinea, BETHUNE-BAKER, p. 418, t. c.

Adelocephala citrina, Parana, SCHAUS, p. 142, Tr. Amer. ent. Soc. xxx; *A. nisa*, Peru, p. 242, *hodora*, *eugenia*, Guiana, *smithi*, Colombia, p. 243, *yucatanana*, Yucatan, *lineata*, Paraguay, p. 244, DRUCE, Ann. Nat. Hist. xiii : n. spp.

Adoneta spinuloides (= *leucosigma* Pack.), DYAR, p. 43, J. N. York ent. Soc. xii; *A. bicaudata*, N. America, id. l. c. n. sp.

Æolosia atropunctata var. *alba*, pl. xi, fig. 2, p. 155, SNELLEN, Tijdschr. Ent. xlvii.

Æthria innotata, Petropolis, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, n. sp.

Afilia osleri, Arizona and Mexico, DYAR, p. 64, P. ent. Soc. Washington vi, n. sp.

Aganais speciosa, larva, cuts, and pupa, AURIVILLIUS, p. 38, Arkiv Zool. ii, No. 4.

Agonis dymus, Fergusson Is., SWINHOE, p. 155, Tr. ent. Soc. London 1904, n. sp.

Agylla hampsoni, Peru, DOGNIN, p. 358, Ann. Soc. ent. Belgique xlviii, n. sp.

* Owing to diversity of opinion as to position of *Chalcosiidæ*, *Epiplemidæ*, both *Bombyces* and *Geometridæ* should be inspected as regards these insects. As regards *Cymatophoridæ*, *Thyatiridæ*; *Noctuidæ* should also be looked through as well as *Bombyces* and *Geometridæ*.

- Altha maculata*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Amata* Fabr. prior to *Syntomis* Ochs., PROUT, p. 116, Entomologist 1904.
- Anadiasa n. n.* for *Nadiasa* Auriv. nec Walker, AURIVILLIUS, p. 8, Jägerskiöld exp. No. 8.
- Anaphe reticulata*, parasite, CAMERON, p. 191, Zeitschr. Hym. Dipt. iv.
- Anaxita lysandra*, N. Peru, DRUCE, p. 242, Ann. Nat. Hist. xiii; *A. martha*, Peru, DOGNIN, p. 55, Naturaliste 1904 : **n. spp.**
- Antarctia pallidivena*, Parana, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Anthela ekeikei*, New Guinea, BETHUNE-BAKER, p. 403, Nov. Zool. xi; *A. symphona*, Tasmania, p. 480, *achromata*, Queensland, p. 481, TURNER, Tr. ent. Soc. London 1904 : **n. spp.**
- Antheraea yamamai*, young larva, PACKARD, p. 569, P. Amer. Ac. xxxix.
- Apaletodes pudefacta*, Arizona and Mexico, DYAR, p. 42, J. N. York Ent. Soc. xii; *A. uvada*, Arizona, BARNES, p. 264, Canad. Ent. xxxvi; *A. mehida*, *signata*, p. 246, *banepa*, p. 247, Peru, DRUCE, Ann. Nat. Hist. xiii : **n. spp.**
- Apantesis bicolor*, Bahamas, HAMPSON, p. 166, Ann. Nat. Hist. xiv, **n. sp.**
- Apisa sjostedti*, Cameroons, AURIVILLIUS, p. 28, Arkiv Zool. ii, No. 4, **n. sp.**
- Archylus tener*, generic characters, DYAR, p. 65, P. ent. Soc. Washington vi.
- Arctia villica* varr., WINTERSTEIN, p. 7, pl. iv, Deutsche ent. Zeitschr. Iris xvii; *A. flavia* varr., LOREZ, p. 123, Soc. ent. xix; *A. maculosa* var. *n. sojota*, TSCHETVERIKOV, p. 79, Rev. Russe Ent. iv; *A. caja*, 1542 eggs, OUDEMANS, p. 95, Ent. Ber. Nederland. i.
- Arguda erectilinea*, Singapore, SWINHOE, p. 152, Tr. ent. Soc. London 1904; *A. pratti*, New Guinea, pl. iv, fig. 33, BETHUNE-BAKER, p. 395, Nov. Zool. xi : **n. spp.**
- Argyrolepidia aequalis*, *capiens integra*, subsp. n., JORDAN, p. 446, Nov. Zool. xi.
- Argyrostigma n. g.* for *Lymantria niobe* Weym., AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Arhacia fascis*, valid, SCHAUS, p. 145, Tr. Amer. ent. Soc. xxx.
- A. meridionalis*, Brit. Guiana, id. l. c. **n. sp.**
- Arsenura richardsoni*, larva, PACKARD, p. 73, Canad. Ent. xxxvi.
- Asura lutara*, larva, pl. x, fig. 10, p. 157, *A. senara*, larva, p. 159, *semicirculata*, larva, pl. x, fig. 11, p. 160, *eos*, larva, fig. 12, *uniformeola*, larva, p. 16, PIEPERS, Tijdschr. Ent. xlvii.
- A. ochreomaculata*, pl. v, fig. 26, *flaveola*, fig. 22, p. 424, *brunneofasciata*, fig. 24, *unicolora*, fig. 25, *sagittaria*, fig. 23, p. 425, *rosacea*, *dinawa*, fig. 38, *aroa*, fig. 37, p. 426, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Asuridia ridibunda*, Batavia, pl. xi, fig. 5, p. 156, larva, pl. x, fig. 9, PIEPERS & SNELLEN, Tijdschr. Ent. xlvii, **n. sp.**
- Athletes steindachneri*, East Africa, REBEL, p. 64, pl. ii, Ann. Hofmus. Wien xix, **n. sp.**
- Attacus atlas* subsp. n., FRUHSTORFER, pp. 283-290, Ent. Meddel. ii; *A. atlas* varr. n., FRUHSTORFER, p. 169, Soc. ent. xviii; *A.*, notes, PACKARD, p. 5, Ent. News Philad. xv.
- A. vibidia*, Tucuman, DRUCE, p. 244, Ann. Nat. Hist. xiii, **n. sp.**
- Automeris pygmaea*, Parana, SCHAUS, p. 141, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Automolis dolens*, Paraguay, DRUCE, p. 241, Ann. Nat. Hist. xiii, **n. sp.**
- Axiologa n. g.* *Lymantriidae* for *pura* Luc., TURNER, p. 477, Tr. ent. Soc. London 1904.
- Birthama plagioscia* = (*Doratifhora aspidophora* Low.), TURNER, p. 241, Tr. R. Soc. S. Austral. xxviii.
- B. leucosticta*, *dochmographa*, Queensland, TURNER, t. c.; *B. basibrunnea*,

- E. Africa*, SWINHOE, p. 154, Tr. ent. Soc. London 1904; *B. dinawa*, New Guinea, pl. v, fig. 33, BETHUNE-BAKER, p. 385, Nov. Zool. xi : **n spp.**
- Bombyx mori*, primitive form *Theophila mandarina*, DEMAISON, p. 109, Bull. Soc. ent. France 1904; *B. mori*, number of eggs, their fertility etc., GAL, Bull. Soc. Nîmes xxxi, pp. 37-43.
- Brahmea japonica*, egg, larva, affinities, PACKARD, pp. 570-578, P. Amer. Ac. xxxix.
- Burgena splendida pectoralis* subsp. n., JORDAN, p. 444, Nov. Zool. xi.
- Byrsia aurantiaca*, larva, PIEPERS, p. 148, Tijdschr. Ent. xlvii; *B. amœna guizonis* subsp. n., JORDAN, p. 443, Nov. Zool. xi.
- Caligula japonica*, life-history, PACKARD, pp. 564-568, P. Amer. Ac. xxxix.
- Callimorpha dominula*, var. from feeding, ZANG, p. 224, Allg. Zeitschr. Ent. ix.
- C. coccinea*, Borneo, SWINHOE, p. 151, Tr. ent. Soc. London 1904, **n. sp.**
- Callosamia calleta*, life-history, PACKARD, pp. 547-551, P. Amer. Ac. xxxix.
- Camerunia ? flava*, Zomba, pl. xxxiii, figg. 5, 6, p. 697, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Caprimina cerulescens mononis* subsp. n., JORDAN, p. 443, Nov. Zool. xi.
- C. choiseuli*, Solomon islds, id. t. c. **n. sp.**
- Cascera bella*, New Guinea, pl. v, fig. 44, BETHUNE-BAKER, p. 374, Nov. Zool. xi, **n. sp.**
- Caviria dinawa*, New Guinea, BETHUNE-BAKER, p. 397, t. c. **n. sp.**
- Celama fuscibasis*, pl. v, fig. 42, *aroa*, figg. 39, 41, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
- Ceramidia butleri*, carried to British Columbia, COCKLE, p. 204, Canad. Ent. xxxvi.
- Cerura australis* var. = (*multipunctata* Bak.), TURNER, p. 833, P. Linn. Soc. N. S. Wales 1904.
- C. multipunctata*, New Guinea, pl. vi, fig. 9, BETHUNE-BAKER, p. 381, Nov. Zool. xi, **n. sp.**
- Ceryx subformicina*, *aroa*, p. 382, *swinhoei*, p. 383, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Chalcosia viridisuffusa*, Borneo, SWINHOE, p. 155, Tr. ent. Soc. London 1904, **n. sp.**
- Chalia laminati*, Tonkin, HEYLAERTS, p. 419, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Chelura hemileuca*, New Guinea, pl. iii, fig. 25, p. 322, ROTHSCILD, Nov. Zool. xi.
- Chionocema trigutta*, larva, *C. rejecta* = (*Lexis bipunctigera* Walk.), AURIVILLIUS, p. 35, Arkiv Zool. ii, No. 4; *C. javanica*, larva, pl. x, fig. 6, p. 151, *pitana*, larva, fig. 7, p. 153, *bianca*, larva, fig. 8, p. 154, PIEPERS, Tijdschr. Ent. xlvii.
- C. affinis*, Java, pl. xi, fig. 1, p. 152, SNELLEN, t. c.; *C. albomaculata*, pl. iv, fig. 35, p. 422, *aroa*, *brunnea*, *dinawa*, *charybdis*, pl. v, fig. 27, p. 423, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Chliara notha* to *Hapigia*, SCHAUS, p. 149, Tr. Amer. ent. Soc. xxx.
- Chondrostega constantina*, p. 53, pl. iv, figg. 46, 53, OBERTHÜR, Études comp. i.
- Chryseglia bipunctata*, New Guinea, pl. vi, fig. 26, BETHUNE-BAKER, p. 420, Nov. Zool. xi, **n. sp.**
- Chrysopoloma crawshayi*, E. Africa, pl. xxxiii, fig. 8, p. 699, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Chrysoscota flavostrigata*, New Guinea, BETHUNE-BAKER, p. 417, Nov. Zool. xi, **n. sp.**
- Citheronia brissoti*, metamorphosis, GALLARDO, p. 268, Bull. Soc. ent. France 1904.

- Clania lewinii*, habits, oviposition etc., LITTLER, pp. 310–315, Entomologist 1904.
- Clemensia albata*, early stages, DYAR, p. 793, P. U. S. Mus. xxvii.
- Cleolosia aroa*, New Guinea, pl. vi, fig. 29, BETHUNE-BAKER, p. 424, Nov. Zool. xi, **n. sp.**
- Clerckia securizonis guizonis* subsp. n., JORDAN, p. 442, Nov. Zool. xi.
- Clisiocampa americana*, natural history, SURFACE (1356); *C. americana*, no. of eggs, GIRAULT, p. 2, Ent. News Philad. xv.
- Cnethocampa pityocampa*, experiments on larva, ROCQUIGNY-ADANSON, Feuille Natural. xxxiv, pp. 186, 187.
- Contheyla lola, brunnea*, Borneo, SWINHÖE, p. 153, Tr. ent. Soc. London 1904; *C. pratti*, pl. v, fig. 46, *ekeikei*, p. 385, *birthama*, p. 386, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Correbidia apicalis*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxxvi, **n. sp.**
- Cossus cossus*, larval habit, SCHUSTER, p. 283, Zool. Garten xlv.
- C. tropicalis*, Brit. Guiana, SCHAUS, p. 142, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Cricula trifenestrata*, note, BOUVIER, p. 254, Bull. Soc. ent. France 1904.
- Ctenucha albolineata*, N. Peru, DRUCE, p. 241, Ann. Nat. Hist. xiii; *C. projecta*, Peru, DOGNIN, p. 67, Naturaliste 1904; *C. annulata*, Bolivia, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Cyanopepla samarca*, Bolivia, SCHAUS, p. 135, t. c. **n. sp.**
- Cycethra n. g. Lasiocampide*, *C. aroa n. sp.*, New Guinea, BETHUNE-BAKER, p. 393, Nov. Zool. xi.
- Dahana cubana*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Dasychira*, larvæ of W. African, and notes, AURIVILLIUS, pp. 57–60, Arkiv Zool. ii, No. 4.
- D. angelus*, Mongolia, TSCHETVERIKOV, p. 77, Rev. Russe Ent. iv; *D. pulchripes*, p. 58, *cameruna*, p. 59, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4; *D. hieroglyphica*, p. 144, *libella, bergmannii*, p. 145, *ila*, p. 146, Ashanti, SWINHÖE, Tr. ent. Soc. London 1904; *D. subnigra*, pl. vi, fig. 41, *subnigropunctata*, fig. 40, *brunnea*, fig. 30, p. 404, *minor*, fig. 27, *kenricki*, pl. iv, fig. 27, p. 405, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Dasychiroides n. g. Lymantriidæ*, p. 405, *obsoleta*, pl. vi, fig. 43, *nigrostrigata*, fig. 28, *pratti*, fig. 7, p. 406, *bicolora*, fig. 6, *brunneostrigata*, fig. 8, p. 407, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.
- Deilemera*, synonymy and taxonomy, pp. 39, 40 = (*Xylecata* Sw.), p. 41, *D. simplex*, larva, cuts, p. 41, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- D. hemixantha*, Cameroons, AURIVILLIUS, p. 41, t. c., *D. rattrayi*, Uganda, SWINHÖE, p. 147, Tr. ent. Soc. London 1904; *D. eddela*, Eugano, SWINHÖE, p. 420, Ann. Nat. Hist. xiv; *D. kebeæ*, pl. vi, fig. 36, *dinawa*, fig. 37, p. 411, *pratti*, fig. 38, p. 412, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Dendrolimus pini* and allies, synonymy, *D. segregatus*, distinct by genitalia, PETERSEN, pp. 163–166, Rev. Russe Ent. iv.
- Diacrista sanio* var. n. *caucasica*, SCHAPOSCHNIKOV, p. 253, Annuaire Mus. St. Petersb. ix; *D. kasloa*, early stages, DYAR, p. 794, P. U. S. Mus. xxvii.
- D. pratti*, pl. iv, fig. 23, p. 412, *dinawa*, fig. 25, *kebea*, fig. 24, p. 413, New Guinea, BETHUNE-BAKER, Nov. Zool. xi; *D. kasloa*, Kootenay, DYAR, p. 18, P. ent. Soc. Washington vi : **n. spp.**
- Dicentria ravana*, San Salvador, *D. ? hertha*, Tucuman, DOGNIN, p. 116, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Dicranura vinula*, larval cannibalism, ZANG, p. 225, Allg. Zeitschr. Ent. ix; *D. himalayana*, larva, HAMPSON, p. 150, J. Bombay Soc. xvi.
- Dinawa n. g. Limaodidæ*, *D. rufa*, pl. v, fig. 32, *nigricans*, fig. 11, **n. spp.**, New Guinea, BETHUNE-BAKER, p. 386, Nov. Zool. xi.
- Diversosexus n. g. Lymantriidæ*, p. 402, *D. bicolor*, pl. vi, fig. 4, *aroa*, fig. 3, p. 403, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.

- Doratifera unicolora* = (*stenora* Turn.), TURNER, p. 241, Tr. R. Soc. S. Austral. xxviii; *D. casta*, larva, RAINBOW, p. 253, pl. xxix, Rec. Austral. Mus. v.
- Duomitus leuconotus*, habits, life-history, STEBBING, pp. 25-30, J. Asiat. Soc. Bengal lxxiii, part 2.
- D. benestriata*, Bahamas, HAMPSON, p. 180, Ann. Nat. Hist. xiv, **n. sp.**
- Dysauxes punctata* var. *n. ragusaria*, ZICKERT, p. 97, Nat. Sicil. xvii.
- Eilema pulverosa*, Cameroons, AURIVILLIUS, p. 34, Arkiv Zool. ii, No. 4, **n. sp.**
- Eligma* referred to *Arctiida*, *E. hypsoides*, larva, p. 36, *E. duplicata*, larva and pupa, cuts, p. 37, AURIVILLIUS, t. c.
- Elysium barnesi*, Cuba, *systron*, Parana, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Entometa spodopa*, *plinthopa*, Queensland, TURNER, p. 239, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Eohemera* **n. g.** for *Nyctemera fulleri* Druce, AURIVILLIUS, p. 42, Arkiv Zool. ii, No. 4.
- Epanaphe* **n. g.** for *moloneyi* Dr., and *carteri* Walsingh., AURIVILLIUS, p. 8, t. c.; *E. clarilla*, Mashonaland, pl. xxxiii, fig. 10, p. 699, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Epipyrops navai*, Japan, DYAR, p. 19, P. ent. Soc. Washington vi, **n. sp.**
- Eragisa viridis*, Rio Janeiro, *E. ? sabulosa*, Chiriqui, SCHAUS, p. 144, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Eriogaster philippsi*, Haifa, BARTEL, p. 10, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Eucreon cubensis*, *irrorata*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Euchromia lethe*, larva, AURIVILLIUS, p. 33, Arkiv Zool. ii, No. 4.
- Eucyane gundlachia*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Eugoa tricolora*, pl. v, fig. 13, *conflua*, fig. 12, New Guinea, BETHUNE-BAKER, p. 427, Nov. Zool. xi, **n. spp.**
- Eunotela moqui*, Arizona, BARNES, p. 266, Canad. Ent. xxxvi, **n. sp.**
- Euprepia pudica*, stridulation, POWELL, p. 327, Ent. Rec. xvi.
- Euproctilla* **n. g.** near *Euproctis*, *E. insignis*, *E. ? disjuncta* **n. spp.**, Cameroons, AURIVILLIUS, p. 54, Arkiv Zool. ii, No. 4.
- Euproctis lyoma*, Cameroons, SWINHOE, p. 131, Ann. Nat. Hist. xiv; *E. sjostedti*, *rubroguttata*, Cameroons, AURIVILLIUS, p. 53, Arkiv Zool. ii, No. 4; *E. lyclene*, Borneo, SWINHOE, p. 144, Tr. ent. Soc. London 1904; *E. revera*, New Guinea, SWINHOE, p. 421, Ann. Nat. Hist. xiv; *E. swinhoei*, pl. iv, fig. 20, *virginea*, fig. 16, p. 398, *parallelaria*, *kebea*, fig. 30, *dinawa*, fig. 29, *yulei*, fig. 28, p. 399, *rubroradiata*, fig. 21, *pratti*, fig. 13, *fuscoradiata*, pl. vi, fig. 5, p. 400, *aroa*, *nigroapicalis*, pl. iv, fig. 34, *irregularis*, pl. vi, fig. 14, *albociliata*, fig. 2, p. 401, *novæguinensis*, *sublutea*, *flavicaput*, p. 402, New Guinea, BETHUNE-BAKER, Nov. Zool. xi; *E. leptotypa*, *ericydes*, Queensland, TURNER, p. 475, Tr. ent. Soc. London 1904 : **n. spp.**
- Eupterote jaresia*, Celebes, SWINHOE, p. 152, Tr. ent. Soc. London 1904, **n. sp.**
- Eustema carama*, Peru, DRUCE, p. 248, Ann. Nat. Hist. xiii, **n. sp.**
- Fentonia corticicolor*, Cameroons, p. 3, pl.-fig. 11, AURIVILLIUS, Arkiv Zool. ii, No. 4, **n. sp.**
- Gargetta africana*, Cameroons, AURIVILLIUS, p. 7, t. c. **n. sp.**
- Garudiniotis aroa*, New Guinea, pl. iv, fig. 37, BETHUNE-BAKER, p. 422, Nov. Zool. xi, **n. sp.**
- Gastropacha populifolia* var. *flava*, SCHULTZ, p. 185, Soc. ent. xviii; *G. pini*, larva, the blue stripes, CHOLODKOVSKY, p. 556, pl. xxxi, fig. 3, Zool. Jahrb. Syst. xix.

- Geodena quadriguttata* = (*Cypra bimaculata* Walk.), SWINHÖE, p. 148, Tr. ent. Soc. London 1904.
- G. semihyalina*, *bandajoma*, *accra*, p. 149, *suffusa*, *inferna*, *partita*, *surrendra*, p. 150, W. Africa, SWINHÖE, t. c. **n. spp.**
- Gerontia* **n. g.** *Megalopygidae*, *G. omayena* **n. sp.**, British Guiana, SCHAUS, p. 139, Tr. Amer. ent. Soc. xxx.
- Girpa notata* Holl. to *Geodena*, SWINHÖE, p. 151, Tr. ent. Soc. London 1904.
- Gloveria coronada*, Arizona, BARNES, p. 268, Canad. Ent. xxxvi, **n. sp.**
- Gnophela clappiana*, idiomorph **n. ruidosensis**, COCKERELL, p. 213, Entomologist 1904.
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- Graphosia ochracea*, New Guinea, pl. v, fig. 36, BETHUNE-BAKER, p. 415, Nov. Zool. xi, **n. sp.**
- Gunda kebea*, p. 370, pl. iv, fig. 2, *aroa*, p. 371, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
- Halesidota maculata* var. **n. eureka**, DYAR, p. 19, P. ent. Soc. Washington vi.
- H. albipennis*, Bahamas, HAMPSON, p. 166, Ann. Nat. Hist. xiv; *H. grotei*, *tanamo*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Halone flavopunctata*, pl. v, fig. 28, New Guinea, BETHUNE-BAKER, p. 421, Nov. Zool. xi, **n. sp.**
- Hapigia simplex* = (*ribbei* Druce), SCHAUS, p. 148, Tr. Amer. ent. Soc. xxx.
- H. estrella*, Arizona, BARNES, p. 267, Canad. Ent. xxxvi; *H. directa*, Cuba, p. 148, *curvilinea*, *plateada*, Brit. Guiana, p. 149, SCHAUS, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Heliosia charopa*, Queensland, TURNER, p. 212, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
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- Hirsutopalpis* **n. g.** *Notodontidae*, *H. fasciata* **n. sp.**, New Guinea, BETHUNE-BAKER, p. 375, Nov. Zool. xi.
- Homococera rhodocera*, Chiriqui, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Homophylotis* **n. g.** near *Procris*, *H. thyridota* **n. sp.**, Queensland, TURNER, p. 243, Tr. R. Soc. S. Austral. xxviii.
- Hyaloperina nudiuscula*, Congo, AURIVILLIUS, p. 63, Arkiv Zool. ii, No. 4, **n. sp.**

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- Imaus niveus*, *spodea*, pl. vi, fig. 1, *aroa*, *pratti*, pl. iv, fig. 15, & pl. vi, fig. 12, p. 409, *marginepunctata*, pl. vi, fig. 13, *dubia*, fig. 10, p. 410, *sulphurea*, fig. 11, p. 411, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
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- Lasioceros* **n. g.** *Notodontidæ*, p. 380, *L. aroa* **n. sp.**, New Guinea, p. 381, BETHUNE-BAKER, Nov. Zool. xi.
- Lasiochra* **n. g.** *Limacodidæ*, *L. pulchra*, pl. v, fig. 49, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 392, t. c.
- Lasiolimacos* **n. g.** *Limacodidæ*, *L. pratti*, pl. vi, fig. 32, *kenricki*, fig. 33, p. 388, *ferruginea*, fig. 50, p. 389, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.
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- Leptonadata* **n. g.** *Notodontidæ*, p. 2, *L. sjostedti* **n. sp.**, Cameroons, p. 3, AURIVILLIUS, Arkiv Zool. ii, No. 4.
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Macaduna bipunctata, pl. v, fig. 29, *aroa*, New Guinea, BETHUNE-BAKER, p. 421, t. c. **n. spp.**
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Meragisa dasra, p. 116, *darida*, p. 117, Peru, DOGNIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Metarteta nigriceps, p. 30, *rubrovittata*, *preussi*, p. 31, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4, **n. spp.**
Mitochrista vetusta, Java, pl. xi, fig. 4, p. 163, SNELLEN, Tijdschr. Ent. xlvii, **n. sp.**
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N. melanopa, New Guinea, pl. v, fig. 19, BETHUNE-BAKER, p. 417, Nov. Zool. xi, **n. sp.**
Nola distributa, larva, pl. x, fig. 1, p. 139, PIEPERS, Tijdschr. Ent. xlvii.

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- Nudaria discipuncta*, larva, p. 164, PIEPERS, Tijdschr. Ent. xlvii.
- Nudaurelia dione*, larva, AURIVILLIUS, p. 10, cut, Arkiv Zool. ii, No. 4.
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- Nystalea kayei*, Brit. Guiana, p. 142, *guttulata*, Cuba, *malga*, *corrusca*, Rio Janeiro, p. 143, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Odonestis pruni* ab. *rosacea*, SCHULTZ, p. 185, Soc. ent. xviii.
- O. centralistrigata*, pl. iv, fig. 7, New Guinea, BETHUNE-BAKER, p. 397, Nov. Zool. xi, **n. sp.**
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- Omichlis hamptoni*, pl. v, fig. 2, p. 375, *dinawa*, fig. 3, *ochracea*, fig. 6, p. 376, *griseola*, fig. 7, *pratti*, fig. 5, *rufofasciata*, pl. vi, fig. 17, p. 377, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Oeonistis bicolora*, New Guinea, pl. vi, fig. 34, BETHUNE-BAKER, p. 420, Nov. Zool. xi, **n. sp.**
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- Othorene rubra*, *carisma*, p. 141, *subochreatea*, p. 142, Brit. Guiana, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Pais ansorgei*, Africa, JORDAN, p. 445, Nov. Zool. xi, **n. sp.**
- Paraceryx* **n. g.** *Syntomidae*, *P. aroa* **n. sp.**, New Guinea, BETHUNE-BAKER, p. 384, Nov. Zool. xi.
- Paradohertya* **n. g.** *Lithosiinae*, *P. trifascia*, pl. iv, fig. 36, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 421, t. c.
- Parasa toxoleuca*, Queensland, TURNER, p. 242, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Parazeuzera* **n. g.** *Cossidae*, *P. celæna*, pl. v, fig. 9, *aurea*, fig. 10, **n. spp.**, New Guinea, BETHUNE-BAKER, p. 384, Nov. Zool. xi.
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- Perophora bilinea*, Parana, SCHAUS, p. 141, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Phalera ? variegata*, Cameroons, AURIVILLIUS, p. 4, Arkiv Zool. i, No. 4, **n. sp.**
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- Pielus aphenges*, N. S. Wales, TURNER, p. 247, Tr. R. Soc. S. Austral. xxviii, **n. sp.**

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- Pselaphelia* **n. g.** for *Copaxa gemmifera* Butl., AURIVILLIUS, p. 13, cut, t. c.
- Pseudantheræa discrepans*, pupa, AURIVILLIUS, p. 12, t. c.
- Pseudapiconoma compsa*, *gloriosa*, p. 441, *fenestrata*, p. 442, Angola, JORDAN, Nov. Zool. xi, **n. spp.**
- Pseudilema* **n. g.** *Lithosünæ*, p. 418, *P. dinawa*, pl. v, figg. 17, 18, p. 419, **n. sp.**, New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Pseudolabes oophora*, larva, p. 146, pl. x, fig. 5, PIEPERS, Tijdschr. Ent. xlvii.
- Pseudodreata* **n. g.** *Eupterotidæ*, *P. strigata* **n. sp.**, pl. v, fig. 45, New Guinea, BETHUNE-BAKER, p. 371, Nov. Zool. xi.
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- Pseudogargetta* **n. g.** *Notodontidæ*, *P. diversa* **n. sp.**, pl. v, fig. 4, New Guinea, BETHUNE-BAKER, p. 373, Nov. Zool. xi.
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- Rifargia picta*, *guianensis*, Brit. Guiana, SCHAUS, p. 147, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Roeselia ustipennis*, larva, pl. x, fig. 2, p. 140, PIEPERS, Tijdschr. Ent. xlvii.
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- Sarosia meridensis*, Venezuela, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Saturnia pavonia* ab. *n. stefanelli*, ROSTAGNO, p. 122, Boll. Soc. zool. Ital. xii, p. 122.

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- Scaptosyle thestias*, pl. xi, fig. 6, p. 149, *bifasciata*, fig. 7, p. 150, Java, SNELLEN, Tijdschr. Ent. xlvii; *S. aroa*, New Guinea, pl. vi, fig. 19, BETHUNE-BAKER, p. 422, Nov. Zool. xi : **n. spp.**
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- Scoliacta aroa*, p. 416, *hampsoni*, pl. v, fig. 20 and pl. vi, fig. 23, p. 417, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
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- Squamosala* **n. g.** *Limacodidae*, p. 392, *S. nigroscigmata*, pl. v, fig. 47, p. 393, **n. sp.**, New Guinea, BETHUNE-BAKER, t. c.
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 n. sp., AURIVILLIUS, Tr. ent. Soc. London 1904.
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NOCTUIDÆ.

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 HORST (666), HERZ (680, 680A), HOLE (696), JOANNIS (763), MEYRICK
 (947, 948), OBERTHÜR (987), PÜNGELER (1110, 1111), REBEL (1122),
 SCHAUS (1225), SMITH (1312-1314), SWINHÖE (1361, 1364), THURAU
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The head-shield of pupa, HAVERHORST (666).

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 n. sp.

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- Amiana* **n. g.** p. 104, *A. niama* **n. sp.**, Arizona, p. 105, DYAR, P. ent. Soc. Washington vi.
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- Anarta mausi*, Centr. Asia, PÜNGELER, p. 130, Soc. ent. xix, **n. sp.**
- Angitia pulchra, perplexa*, Venezuela, *A.? viridans*, Parana, SCHAUS, p. 165, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Antaplaga hachita*, Arizona, BARNES, p. 241, Canad. Ent. xxxvi, **n. sp.**
- Apatela*, varr. *n.*, DYAR, p. 29, Canad. Ent. xxxvi; *A. dactylina-hesperida*, p. 797, *felina*, p. 798, *leporina-mæsta*, p. 799, *innotata-griseor*, p. 801, *grisea-revellata*, p. 802, *distans-dolorosa*, p. 804, *perdita*, p. 805, *impleta-illita*, p. 807, early stages, DYAR, P. U. S. Mus. xxvii.
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- Collusa ekeikei*, New Guinea, pl. vi, fig. 42, BETHUNE-BAKER, p. 429, Nov. Zool. xi, **n. sp.**
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- Cucullia linosyridis* varr., larva, p. 32, pl. ii, figg. 3, 4, 12, *C. umbratica* var., p. 32, *anthemidis*, larva, p. 34, FUCHS, Jahrb. nassau. Ver. lvii.
- C. clarior*, Sarepta, FUCHS, p. 31, pl. ii, fig. 2, t. c.; *C. indicta*, Calgary, SMITH, p. 154, Canad. Ent. xxxvi; *C. aqua*, Arizona, BARNES, p. 203, Canad. Ent. xxxvi, *C. oribac*, Arizona, BARNES, p. 237, t. c.: **n. spp.**
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- Cyrima muscosa*, Mexico, SCHAUS, p. 152, Tr. Amer. ent. Soc. xxx, **n. sp.**
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- Grotella blanca*, p. 239, *tricolor*, p. 240, Arizona, BARNES, Canad. Ent. xxxvi, n. spp.
- Gustiana guarda*, Mexico, SCHAUS, p. 168, Tr. Amer. ent. Soc. xxx, n. sp.
- Hadena ferrago* ab. n. *umbrata*, HERZ, p. 8, Ofv. Finska Forh. xlv, No. 15; *H. curvata*, p. 810, and *versuta*, p. 811, early stages, DYAR, P. U. S. Mus. xxvii.
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- Heliothis cora* ab. n. *odenwalli*, HERZ, p. 21, Ofv. Finska Forh. xlv, No. 15.
- H. dipsacea* var. n. *albida*, FUCHS, p. 38, Jahrb. nassau. Ver. lvii.
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- Hyppa xylinoides* and *indistincta*, early stages, DYAR, pp. 814, 815, P. U. S. Mus. xxvii.
- Iphimorpha aroensis*, p. 152, *chucha*, *ethela*, p. 153, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Ischyia porphyrea*, Thursday isld., TURNER, p. 217, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Isoclora leuconeura*, Centr. Asia, PÜNGELER, p. 131, Soc. ent. xix, n. sp.
- Koraia* n. g. near *Catocala*, p. 313, *K. pirata* sp. n., Korea, p. 314, pl. i, fig. 18, HERZ, Annuaire Mus. St. Petersb. ix.
- Lena* n. g. near *Hyptioxesta*, *L. poppiusi* n. sp., Lena, HERZ, p. 10, Ofv. Finska Forh. xlv.

- Lepidodes pectinata*, Rio Janeiro, SCHAUS, p. 167, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Leptina* ? *petrovna*, Petropolis, SCHAUS, p. 152, t. c. **n. sp.**
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- Leucanitis sculpta*, Togus-torau, PÜNGELER, p. 292, pl. vi, fig. 8, Deutsche ent. Zeitschr. xvi, **n. sp.**
- Lithacodia castrensis*, Parana, SCHAUS, p. 161, Tr. Amer. ent. Soc. xxx, **n. sp.**
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- Mamestra crydina* var. n., DYAR, p. 32, Canad. Ent. xxxvi ; *M.*, early stages of numerous N. American, DYAR, pp. 839-859, P. U. S. Mus. xxvii.
- M. obesula*, p. 151, *dodii*, p. 152, *acuterminalis*, p. 153, Calgary, SMITH, Canad. Ent. xxxvi ; *M. elsinora*, p. 197, *huevo*, p. 198, Arizona, BARNES, Canad. Ent. xxxvi ; *M. (Discestra) eremistis*, Centr. Asia, PÜNGELER, p. 130, Soc. ent. xix ; *M. isoloma*, Saravshan, PÜNGELER, p. 286, pl. vi, fig. 2, Deutsche ent. Zeitschr. Iris xvi : **n. spp.**
- Massala marmona*, p. 167, *carthia*, p. 168, Brazil, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Microcoelia parigana, farona, mastera*, S. America, SCHAUS, p. 151, t. c. **n. spp.**
- Megalodes hedychroa*, Queensland, TURNER, p. 218, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Moma tybo*, Arizona, BARNES, p. 166, Canad. Ent. xxxvi, **n. sp.**
- Mycterophora longipalpata*, early stages, DYAR, p. 877, P. U. S. Mus. xxvii.
- Nenia marama*, Venezuela ; SCHAUS, p. 165, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Noctua umbrosa* var. n., DYAR, p. 31, Canad. Ent. xxxvi ; *N. perumbrosa* n. n. for the above, id. t. c. p. 102 ; *N. rosaria*, p. 825, *oblata*, p. 827, *sierræ*, p. 828, early stages, DYAR, P. U. S. Mus. xxvii.
- N. dislocata*, Calgary, SMITH, p. 149, Canad. Ent. xxxvi, **n. sp.**
- Nodaria aneliopis*, Thursday Isld., TURNER, p. 219, Tr. R. Soc. S. Austral. xxviii ; *N. selenitis, diopis*, Bahamas, HAMPSON, p. 173, Ann. Nat. Hist. xiv : **n. spp.**
- Oncocnemis polingii*, Arizona, BARNES, p. 169, Canad. Ent. xxxvi ; *O. laticosta*, p. 63, *tetrops*, p. 64, Arizona, DYAR, P. ent. Soc. Washington vi : **n. spp.**
- Ophiura analis* an sp. n. ? HERZ, p. 305, Annuaire Mus. St. Petersb. ix.
- Orthosia witzenmanni*, larva, LUCAS, p. 232, Bull. Soc. ent. France 1904 ; *O. witzenmanni*, metamorphosis, CHRÉTIEN, p. 269, Naturaliste 1904.
- O. verberata*, Calgary, SMITH, p. 153, Canad. Ent. xxxvi, **n. sp.**
- Oslaria n. g.* type *Zotheca viridifera* Grote, DYAR, p. 41, J. N. York Ent. Soc. xii.
- Oxyzenis subsimplex*, Arizona, DYAR, p. 42, t. c. **n. sp.**
- Pachetra leucophæa*, larva, etc., DOLLMAN, pp. 225-228.
- Pachnobia hyperborea* varr. p. 60, figg. 9-11, OBERTHÜR, Études comp. i.
- Palthis angularis*, early stages, DYAR, p. 881, P. U. S. Mus. xxvii.
- Parabasis n. g.* p. 428, *P. pratti*, pl. iv, fig. 26, p. 429, **n. sp.**, New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Pericyma acrosticta*, pl. vi, fig. 6, *dispar*, fig. 7, Engeddi, PÜNGELER, p. 290, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Peridroma ypsilon* var. n. *albescens*, CLARK, p. 166, pl. viii, Ent. Rec. xvi ;

- P. subjugata* var. n., DYAR, p. 31, Canad. Ent. xxxvi; *P. occulta*, p. 821 and *stricta subjugata*, p. 823, early stages, DYAR, P. U. S. Mus. xxvii.
- Perigrapha achsha*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi, **n. sp.**
- Photedes apicata*, *virescens*, *costipuncta*, *stenelea*, p. 156, *marita*, *perigeta*, Brazil, *repanda*, *P. ? mochensis*, Mexico, p. 157, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Phyllodes enganensis*, Engano, SWINHOE, p. 424, Ann. Nat. Hist. xiv, **n. sp.**
- Platyja rufiscripta*, Borneo, SWINHOE, p. 141, Tr. ent. Soc. London 1904, **n. sp.**
- Plutypirigea anotha*, Brit. Columbia, DYAR, p. 29, Canad. Ent. xxxvi, **n. sp.**
- Pleroma cinerea*, Oregon, SMITH, p. 56, Psyche xi, **n. sp.**
- Plusia festucae* in New Zealand, PHILPOTT, p. 161, Tr. N. Zealand Inst. xxxvi.
- P. pterygota*, Oahu, MEYRICK, p. 348, Fauna Hawaiiensis iii, **n. sp.**
- Polia maxima*, California, DYAR, p. 40, J. N. York Ent. Soc. xii, **n. sp.**
- Polychrysis formosa*, larva, KEARFOTT, p. 301, Ent. News Philad. xv.
- Polydesma ? striata*, Korea, HERZ, p. 303, pl. i, fig. 4, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Polyphœnis sericata* var. n. *viridata*, RAGUSA, p. 18, pl. i, fig. 1, Natural. Sicil. xvii.
- Porosagrotis, thanatologia*, British Columbia, DYAR, p. 833, P. U. S. Mus. xxvii, **n. sp.**
- Praxis alampeta*, Brisbane, TURNER, p. 216, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Prodenia marima*, Parana, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Prometopus inaseuta* Gn. = (*Caradrina chromoneura* Turn. = *Erastroides lichnomima* Turn.), TURNER, p. 215, Tr. R. Soc. S. Austral. xxviii.
- P. rubrispersa*, Queensland, *xerampelina*, West Australia, p. 214, *nodyna*, Brisbane, p. 215, TURNER, t. c. **n. spp.**
- Propatria*, characters, TURNER, p. 213, t. c.
- Prothymia rosario*, Arizona, BARNES, p. 264, Canad. Ent. xxxvi, **n. sp.**
- Pseudaglossa shelfordi*, Borneo, SWINHOE, Tr. ent. Soc. London 1904, **n. sp.**
- Pseudina janeira*, Brazil, SCHAUS, p. 163, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Pseudoglaea lobata*, Arizona, BARNES, p. 237, Canad. Ent. xxxvi, **n. sp.**
- Pseudotamila avemensis*, Manitoba, DYAR, p. 41, J. N. York Ent. Soc. xii, **n. sp.**
- Rhaesena apicalis*, Borneo, SWINHOE, p. 143, Tr. ent. Soc. London 1904, **n. sp.**
- Rhizagrotis socorro*, p. 171, *salina*, p. 172, Arizona, BARNES, Canad. Ent. xxxvi, **n. spp.**
- Rhynchagrotis scopeops*, Brit. Columbia, DYAR, p. 31, Canad. Ent. xxxvi, **n. sp.**
- Sarrothripus revayana* var. n. *asiatica*, KRULIKOVSKY, p. 91, Rev. Russe Ent. iv.
- Simplicia rectalis*, autumnal var., FUCHS, p. 37, Jahrb. nassau. Ver. lvii.
- Spirama sumbana*, Sumba, p. 422, *kalaensis*, Flores, p. 423, SWINHOE, Ann. Nat. Hist. xiv, **n. spp.**
- Spragueia inversa*, *margarita*, p. 163, *taragma*, *tarasca*, p. 164, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Stellidia funerea*, *nivosita*, *diana*, Parana, SCHAUS, p. 166, t. c. **n. spp.**
- Stibadium ochoa*, Arizona, p. 241, *manti*, Texas, p. 242, BARNES, Canad. Ent. xxxvi; *S. viridescens*, Mexico, SCHAUS, p. 153, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Strabea punctilinea*, Parana, SCHAUS, p. 167, t. c. **n. sp.**
- Teniocampa communis*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi; *T. terminatissima*, New Mexico, DYAR, p. 104, P. ent. Soc. Washington vi; *T. alamosa*, Arizona, BARNES, p. 201, Canad. Ent. xxxvi : **n. spp.**

- Tarache angularis*, *triangularis*, *mediana*, *puella*, p. 158, *praxina*, *caterva*, *villica*, *violetta*, p. 159, *viridans*, *T. ? benita*, p. 160, S. America, *T. ? pyralina*, Mexico, p. 159, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Thalpochares costagna*, p. 161, *guarama*, *grisella*, *T. ? nigripalpis*, *lorna*, S. America, *T. ? mirella*, Mexico, p. 162, SCHAUS, t. c. **n. spp.**
- Thermesia flavilineata*, Bahamas, HAMPSON, Ann. Nat. Hist. xiv, p. 170, **n. sp.**
- Thyria cræsita*, *satana*, Parana, SCHAUS, p. 164, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Tornacontia, mediatrix*, Arizona, DYAR, p. 62, P. ent. Soc. Washington vi, **n. sp.**
- Toxocampa moellendorffi*, Korea, HERZ, p. 318, pl. 1, fig. 1, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Toxophleps pallida*, *T. ? bilinia*, S. E. Brazil, SCHAUS, p. 160, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Tricholita chipeta*, Colorado, BARNES, p. 202, Canad. Ent. xxxvi, **n. sp.**
- Trigonophora periculosa*, early stages, DYAR, p. 871, P. U. S. Mus. xxvii.
- Triphæna comes*, broods and varr., PROUT, pp. 1-5, Ent. Rec. xvi.
- Vestura n. g. V. adeba n. sp.*, Singapore and Borneo, SWINHOE, p. 142, Tr. ent. Soc. London 1904.
- Xerociris n. n.* for *Ciris* Gr., COCKERELL, p. 76, Ent. News Philad. xv.
- Xylina fletcheri*, p. 56, *ancilla*, p. 57, *vertina*, *merceda*, p. 58, Canada, Oregon, SMITH, Psyche xi, **n. spp.**
- Xylophasia unita*, *enigra*, p. 54, *rorulenta*, p. 55, Calgary, SMITH, t. c. **n. spp.**
- Zanclognatha ? punctalis*, Korea, HERZ, p. 324, pl. i, fig. 9, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Zosteropoda hirtipes*, early stages, DYAR, p. 866, P. U. S. Mus. xxvii.

GEOMETRIDÆ, EPIPLEMIDÆ, URANIIDÆ.

[Cf. CHRÉTIEN (275), DIETZE (380), DOGNIN (398, 399), DYAR (432), HAMPSON (653), HERZ (680, 680A), HIMSL (687), MEYRICK (947), OBERTHÜR (987), PEARSELL (1013), PROUT (1108), PÜNGELER (1110), REBEL (1122), ROTHSCHILD (1194), SWINHOE (1362, 1363), TAYLOR (1369), THIERRY-MIEG (1385), TURNER (1409, 1411), WARREN (1474-1477).]

Larvæ of French species, FRIONNET (555).

DYAR gives notes synonymical etc., on the Hulst collection for which reference must be made to P. ent. Soc. Washington vi, pp. 222-227.

Review, with changes and synonymy, of Hulst's classification of N. American *Geometridæ*, PEARSELL, pp. 208-210, Canad. Ent. xxxvi.

Revision of *Australian Geometridæ*, TURNER, P. Soc. Victoria xvi, synonymy not given in our pages.

Abraças geometraria var. *n. minor*, pl. i, fig. 17, p. 353, HERZ, Annuaire Mus. St. Petersb. ix; *A. marginata nigrounicolorata*, HAVERKAMPF, p. 187, pl. i, Ann. Soc. ent. Belgique xlviii.

A. macularia, Korea, HERZ, p. 354, pl. i, fig. 16, Annuaire Mus. St. Petersb. ix; *A. transvisata*, Peru, WARREN, p. 543, Nov. Zool. xi : **n. spp.**

Acidalia, varr. of European, FUCHS, p. 17, Soc. ent. xix; *A. deversaria* var. *laureata*, pl. ii, fig. 6, *A. difflata* distinguished, FUCHS, p. 38, Jahrb. nassau. Ver. lvii; *A. immutata* var. *n. syriacata*, NEUBURGER, p. 115, Soc. ent. xix; *A. emutaria*, egg and young larva, SICH, p. 108, Entomologist 1904; *A. metokiensis*, p. 248, pl. v, fig. 15, REBEL, Ann. Hofmus. Wien xix.

A. cajanderi, p. 13, *anaïtaria*, p. 14, Lena, HERZ, Ofv. Finska Forh. xlv, No. 15, **n. spp.**

- Acrosemia dichorda*, Bahamas, HAMPSON, p. 177, Ann. Nat. Hist. xiv, **n. sp.**
Acerotomodes lichenifera, Peru, WARREN, p. 564, Nov. Zool. xi, **n. sp.**
Æschropteryx flexilinea, olivata, Mexico, WARREN, p. 128, t. c.; *Æ. præcurvata*, Paraguay, WARREN, p. 564, t. c. **n. spp.**
Agathia elenaria, Old Calabar, SWINHÖE, p. 542, Tr. ent. Soc. London 1904; *A. pauper*, Warri, WARREN, p. 463, Nov. Zool. xi : **n. spp.**
Agia eborata? = *Cysteopteryx viridata*, TAYLOR & DYAR, pp. 46, 47, J. N. York Ent. Soc. xii.
Agraptochlora pallida, p. 463, *rubriceps*, p. 464, Angola, WARREN, Nov. Zool. xi, **n. spp.**
Alcis huamani, Peru, DOGNIN, p. 363, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Aletis rubricaput, Gold Coast, SWINHÖE, p. 578, Tr. ent. Soc. London 1904, **n. sp.**
Alex aurantiata, Obi, WARREN, p. 484, Nov. Zool. xi, **n. sp.**
Amaurinia expallidata, Trinidad, WARREN, p. 81, t. c.; *A. angulata, brunnea*, p. 525, *commixta*, p. 526, Peru, WARREN, t. c. : **n. spp.**
Ameria seminigra, Peru, WARREN, p. 81, t. c. **n. sp.**
Amraica superans var. *n. dubitans*, HERZ, p. 365, pl. i, fig. 14, Annuaire Mus. St. Petersb. ix.
Anapalta n. g. Hydriomeninæ, p. 43, *perdecora, roseoliva*, Bolivia, p. 44, *sombreira*, Peru, *violetta*, Bolivia, p. 45, **n. spp.**, WARREN, Nov. Zool. xi; *A. subfusca*, Peru, WARREN, p. 576, t. c. **n. sp.**; *A. ruficoesia*, Argentina, DOGNIN, p. 359, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Anisodes aurantiata, bipunctata, p. 27, Peru, *flavidiscata*, Huatuxco, *hieroglyphica*, p. 28, *imparistigma*, Peru, *maguidiscata*, Bolivia, p. 29, *mediolineata*, Peru, *ochricomata*, Santa Marta, p. 30, *rhodostigma*, Bolivia, *subænescens*, Peru, p. 31, *torsivena*, Bolivia, p. 32, WARREN, Nov. Zool. xi; *A. decorata*, p. 507, *fulgurata, gigantula*, p. 508, *maculidiscata, multipunctata*, p. 509, *pomidiscata, rufistigma, rufulata*, p. 510, Peru, WARREN, t. c. **n. spp.**
Anisolasia n. g. Hydriomeninæ, for *Cataclysmæ napassa* Dogn., WARREN, p. 46, Nov. Zool. xi.
Anisoperas adulta, Colombia, *A. ? aurantiaca*, Ecuador, *A. latibrunnea*, Peru, WARREN, p. 129, t. c.; *A. dentilineata*, Mexico, p. 564, *olivata*, Bolivia, *undilinea*, Argentina, p. 565, WARREN, t. c. : **n. spp.**
Aphilopota ambusta, Angola, WARREN, p. 472, t. c. **n. sp.**
Apicia, distinguished from *Caberodes*, *A. fractilineata* ♂, *A. subfasciata* ab. nov. *obscurata*, WARREN, p. 130, t. c.; *A.*, cf. *Loxapicia, Mesedra*.
A. bottgeri, Peru, *citrina*, Venezuela, WARREN, p. 566, Nov. Zool. vi, **n. spp.**
Apiciopsis n. g. near *Apicia*, *A. angusta*, Peru, *obliquaria*, Bolivia, **n. spp.**, WARREN, p. 131, t. c.
Aplodes darwinata, life-history, DYAR, p. 121, Psyche xi.
A. punctata, Jamaica, WARREN, p. 19, Nov. Zool. xi, **n. sp.**
Aplogompha aurifera, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904, **n. sp.**
Aplorama n. g. type *Byssodes nazuda* Druce, WARREN, p. 91, Nov. Zool. xi.
Archichlora marcescens, Niger, WARREN, p. 465, t. c. **n. sp.**
Argyrotome ferruginea var. *n. albinata*, WARREN, p. 93, t. c.
Arhodina modesta, Townsville, WARREN, p. 485, t. c. **n. sp.**
Asestra ustularia, Bolivia, WARREN, p. 132, t. c. **n. sp.**
Asthena euthecta, Brisbane, TURNER, p. 243, P. Soc. Victoria xvi, **n. sp.**
Astyochia membranacea, Peru, WARREN, p. 545, Nov. Zool. xi; *A. subliturata*, Peru, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : **n. spp.**
Atossa alpherakii, Korea, HERZ, p. 376, pl. i, fig. 8, Annuaire Mus. St. Petersb. ix, **n. sp.**
Axiodes, def. amended, WARREN, p. 480, Nov. Zool. xi.
A. ennomaria, S. Africa, id. l. c. **n. sp.**
Azelina nigra, Bolivia, p. 132, *ochriscripta*, Peru, p. 133, WARREN, t. c.; *A. albiseeta*, p. 566, *coronata*, p. 567, Peru, WARREN, t. c.; *A. vulpecula*,

- Peru, DOGNIN, p. 369, Ann. Soc. ent. Belgique xlviii; *A. notodontina*, Peru, THIERRY-MIEG, p. 183, Naturaliste 1904 : **n. spp.**
- Bassania fortis*, Peru, WARREN, p. 567, Nov. Zool. xi, **n. sp.**
- Betulodes n. g.* for *Amphidasys crebraria* Gn., THIERRY-MIEG, p. 183, Naturaliste 1904.
- Biston calaria*, E. Africa, SWINHOE, p. 527, Tr. ent. Soc. London 1904, **n. sp.**
- Blechroma conflua*, *conspersa*, p. 502, *nigricincta*, p. 503, Peru, WARREN, Nov. Zool. xi, **n. spp.**
- Boarmia consortaria* var. *n. marginata*, HERZ, p. 372, pl. i, fig. 6, Annuaire Mus. St. Petersb. ix; *B. selenaria*, larval habits, STEBBING, p. 154, pl. xviii b, J. Linn. Soc. London xxix.
- B. dribaria*, Madagascar, p. 532, *ugandaria*, Africa, p. 533, SWINHOE, Tr. ent. Soc. London 1904; *B. cilicornaria*, Nikko, PÜNGELER, p. 296, pl. vi, fig. 15, Deutsche ent. Zeitschr. Iris xvi; *B. aroensis*, New Guinea, pl. iii, fig. 29, p. 322, ROTHSCILD, Nov. Zool. xi : **n. spp.**
- Bonatea viridilinea*, Peru, WARREN, p. 568, Nov. Zool. xi; *B. maculata*, Bolivia, DOGNIN, p. 367, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Bordeta aroensis*, New Guinea, pl. iii, fig. 37, p. 319, ROTHSCILD, Nov. Zool. xi, **n. sp.**
- Brachyctenistis n. g. Ennominae*, p. 133, *B. undilinea n. sp.*, Peru, p. 134, WARREN, Nov. Zool. xi.
- Brachystichia n. g.* near *Apicia*, *B. nitida n. sp.*, Paraguay, WARREN, p. 134, t. c.
- Brachytrita n. g. Orthostixinae*, *B. cervinaria n. sp.*, E. Africa, SWINHOE, p. 576, Tr. ent. Soc. London 1904.
- Brabirodes n. g. Tephroclystiinae*, *B. peruviana n. sp.*, Peru, WARREN, p. 528, Nov. Zool. xi.
- Brachelia fumistrotata*, Peru, WARREN, p. 550, t. c. **n. sp.**
- Bryoptera bisignata*, p. 106, *canidentata*, p. 107, Peru, WARREN, t. c.; *B. ruficana*, *viridirufa*, Peru, WARREN, p. 551, t. c. : **n. spp.**
- Buttia n. g. Prosoplophinae*, *B. noctuodes n. sp.*, S. Africa, WARREN, p. 481, t. c.
- Cabira lignicolor*, Peru, WARREN, p. 125, t. c. **n. sp.**
- Callipia aurata*, Colombia, p. 79, *flagrans*, *occulta*, Peru, p. 80, WARREN, t. c.; *C. admirabilis*, p. 538, *languescens*, p. 539, Peru, WARREN, t. c.; *C. paradisea*, *rosetta*, Peru, THIERRY-MIEG, p. 140, Naturaliste 1904 : **n. spp.**
- Callipona n. g.* near *Xenographia*, *C. metabolis n. sp.*, Queensland, TURNER, p. 236, Tr. R. Soc. S. Austral. xxviii.
- Callipseustes strigosa*, *subsignata*, Bolivia, WARREN, p. 116, Nov. Zool. xi, **n. spp.**
- Callygris n. g.* for *junctilineata* and *compositata* Walk., THIERRY-MIEG, p. 141, Naturaliste 1904.
- Calocalpe mochica*, p. 361, *chimu*, p. 362, Peru, DOGNIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Calypotome conversa*, *fragmentata*, Brit. Guiana, p. 32, *inornata*, Venezuela, p. 33, WARREN, Nov. Zool. xi, **n. spp.**
- Cambogia anguinata*, *antiopata*, Bolivia, *bellissima*, p. 82, *delicatula*, *flaviflua*, p. 83, *funiculata*, *griseicosta*, p. 84, *lilacina*, Peru, *intacta*, Ecuador, p. 85, WARREN, t. c. **n. spp.**
- Campylona contingens*, Ecuador, WARREN, p. 14, t. c.; *C. brunnea*, Maripa, WARREN, p. 500, t. c. : **n. spp.**
- Caradrinopsis n. g. C. obscuraria n. sp.*, E. Africa, SWINHOE, p. 534, Tr. ent. Soc. London 1904.
- Caripeta interalbicans*, Colorado, WARREN, p. 135, Nov. Zool. xi, **n. sp.**
- Catascia haydenata* ab. nov. *obliterata*, WARREN, p. 115, t. c.
- Celerena substigmatica*, Obi, WARREN, p. 485, t. c. **n. sp.**
- Certima nummifera* to *Oenothalia*, WARREN, p. 559, t. c.

- C. canisparsa*, Peru, p. 135, *delectans*, *nubifera*, *pallidifrons*, Bolivia, p. 136, WARREN, t. c.; *C. ambusta*, p. 568, *bottgeri*, p. 569, Peru, WARREN, t. c. : **n. spp.**
- Chesias spartiata* var. n. *capriata*, PROUT, p. 60, Entomologist 1904.
- Chlorochetu* n. g. *Geometrinae*, *C. longipennis* n. sp., Niger, WARREN, p. 464, Nov. Zool. xi.
- Chloroclystis fulminea* Dogn. to *Ischnopteris*, description, WARREN, p. 118, t. c.
- C. sierraria*, W. Africa, SWINHOE, p. 573, Tr. ent. Soc. London 1904 ; *C. metallospora*, p. 231, *cissocosma*, *mniochroa*, p. 232, *guttifera*, p. 233, *gonias*, *ablechra*, p. 234, Australia, TURNER, P. Soc. Victoria xvi ; *C. microptilota*, Peru, WARREN, p. 86, Nov. Zool. xi : **n. spp.**
- Chogada acaciaria* abb. n. *flavipeta*, *fumata*, WARREN, p. 474, t. c.
- Chrysocraspeda rothschildi* (1903), pl. iii, fig. 31, p. 322, ROTHSCHILD, Nov. Zool. xi.
- C. leighata*, Durban, WARREN, p. 466, Nov. Zool. xi ; *C. latiflavaria*, p. 562, Nyassaland, *zearia*, *doricaria*, p. 563, *planaria*, p. 564, Madagascar, SWINHOE, Tr. ent. Soc. London 1904 : **n. spp.**
- Cidariophanes mamestrina*, Peru, WARREN, p. 556, Nov. Zool. xi, **n. sp.**
- Cimicodes ruptimacula*, Bolivia, WARREN, p. 137, t. c. **n. sp.**
- Cleora umbrosaria*, characters and position, TAYLOR, p. 135, Canad. Ent. xxxvi.
- C. gracilis*, Jamaica, WARREN, p. 107, Nov. Zool. xi, **n. sp.**
- Cnephora facula*, Peru, DOGNIN, p. 368, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Codonia quercimontaria* and *punctaria* varr., *C. porata* var. *visperaria*, FUCHS, p. 40, Jahrb. nassau. Ver. lvii.
- Cænina dentataria*, Abyssinia, SWINHOE, p. 513, Tr. ent. Soc. London 1905, **n. spp.**
- Cænocalpe elongata*, Peru, DOGNIN, p. 360, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Colpodonta phyllodontaria*, Peru, WARREN, p. 569, Nov. Zool. xi, **n. sp.**
- Comibæna flavidisca*, Peru, WARREN, p. 20, t. c. **n. sp.**
- Cophocerotis instar*, Peru, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlvi ; *C. argentistriga*, *ebria*, p. 539, *margaritacea*, *submuscosa*, p. 540, Peru, WARREN, Nov. Zool. xi : **n. spp.**
- Coptopteryx nigraria*, W. Africa, SWINHOE, p. 544, Tr. ent. Soc. London 1904, **n. sp.**
- Coremia ferrugata* var., WOODBRIDGE, p. 10, cut p. 9, Entomologist 1904.
- Cosymbia anandaria*, Trop. Africa, SWINHOE, p. 561, Tr. ent. Soc. London 1904, **n. sp.**
- Craspedia cymiphora*, Bahamas, HAMPSON, p. 179, Ann. Nat. Hist. xiv ; *C. atriliscata*, p. 33, *conduplicata*, Bolivia, *deaurata*, Ecuador, *dorsinigrata*, Peru, p. 34, *internexata*, Ecuador, *trias* with var. *tincta*, S. America, p. 35, *trygodata*, Bolivia, p. 36, WARREN, Nov. Zool. xi : **n. spp.**
- Cratoptera subcitrina*, Peru, WARREN, p. 137, t. c. **n. sp.**
- Crocopteryx aurora*, Peru, WARREN, p. 570, t. c. **n. sp.**
- Cryptoloba dentifascia*, India, WARREN, p. 489, t. c. **n. sp.**
- Cryptoscopa* n. g. *C. apreps* n. sp., Queensland, TURNER, p. 238, Tr. R. Soc. S. Austral. xxviii.
- Cusiala? pulverosa*, Natal, WARREN, p. 472, Nov. Zool. xi, **n. sp.**
- Cyllopoda chibcha* ab. n. *cuneifera*, WARREN, p. 15, t. c.
- C. angustistriga*, Peru, WARREN, l. c. **n. sp.**
- Cymatophora commaculata* Warren, to *Melanoseia*, WARREN, p. 555, Nov. Zool. xi.
- C. matilda*, British Columbia, DYAR, p. 907, P. U. S. Mus. xxvii ; *C. ? chanchani*, Peru, DOGNIN, p. 364, Ann. Soc. ent. Belgique xlvi ;

- C. dislocata*, Peru, *muscosa*, Ecuador, WARREN, p. 108, Nov. Zool. xi;
C. modesta, Paraguay, p. 552, *reducta*, *striata*, Peru, p. 553, WARREN,
 t. c. : **n. spp.**
- Darna rubriplaga*, Ecuador, *volitans*, Peru, WARREN, p. 15, t. c. ; *D. flam-*
miifera, p. 500, *præolata*, p. 501, Peru, WARREN, t. c. : **n. spp.**
- Dasyterna* **n. g.** near *Dasyuris* for *Phytometra tristis* Butl., TURNER, p. 277,
 P. Soc. Victoria xvi.
- Dasyuris cæsia*, p. 278, *hedylepta*, p. 279, Victoria, TURNER, t. c.
n. sp.
- Deilinia acrocossa*, Queensland, p. 236, *catharodes*, Hobart, p. 237, TURNER,
 Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Deinopygia* **n. g.** near *Ptychopoda*, *D. caudata* **n. sp.**, Venezuela, WARREN,
 p. 511, Nov. Zool. xi.
- Devara*, cf. *Emplocia*.
- Devarodes* **n. g.** *Braccinae*, *D. albibasis*, p. 96, *semialbata*, Peru, *vestigata*,
 Bolivia, p. 97, **n. spp.**, WARREN, Nov. Zool. xi; *D. subtineta*, Peru,
 WARREN, p. 544, t. c. **n. sp.**
- Diactinia albinodosa*, Peru, WARREN, p. 46, t. c. **n. sp.**
- Diceratucha* **n. g.** for *Ænone xenopis* Low., SWINHÖE, p. 133, Ann. Nat.
 Hist. xiv.
- Dichorda obliquata*, *perpendicularata*, Mexico, WARREN, p. 503, Nov.
 Zool. xi, **n. spp.**
- Dichromatopodia distans*, Santa Marta, WARREN, p. 36, t. c. **n. spp.**
- Diploctena* **n. g.** near *Xanthorhoe*, *D. argocyma* **n. sp.**, Victoria, TURNER,
 p. 269, P. Soc. Victoria xvi.
- Dolichopyge canioparsa*, Ecuador, p. 46, *fulvistriga*, Bolivia, p. 47, WARREN,
 Nov. Zool. xi, **n. spp.**
- Drepanodes fulvilinea*, Peru, WARREN, p. 138, t. c. **n. sp.**
- Drucina latimargo*, Peru, WARREN, p. 20, t. c. **n. sp.**
- Durbana* **n. g.** for *Fidonia setinata* Feld., WARREN, p. 470, t. c.
- Dyscia* Hub. = (*Scodionia* auctt.), WARREN, p. 476, t. c.
- D. incondita*, *perplexata*, S. Africa, id. l. c. **n. spp.**
- Dysphania chrysocraspedata*, p. 485, *deflavata*, p. 486, Sumatra, WARREN,
 t. c. **n. spp.**
- Dyspteris parvula*, Brit. Guiana, WARREN, p. 527, t. c. **n. sp.**
- Ectropis subaurata* to *Myrioblephara*, WARREN, p. 475, t. c.
- E. nacaria*, Ashanti, SWINHÖE, p. 530, Tr. ent. Soc. London 1904; *E.?*
fulvitincta, Durban, WARREN, p. 474, Nov. Zool. xi; *E. hemiprosopa*,
 Queensland, TURNER, p. 230, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Elphos picaria*, Celebes, WARREN, p. 490, Nov. Zool. xi, **n. sp.**
- Emmiltis* (*Craspedia*) *magnidiscata*, Angola, p. 466, *mombasæ*, E. Africa,
 p. 467, WARREN, t. c. ; *E. (Craspedia) cinerosaria*, *convergens*, *per-*
fumosa, Peru, WARREN, p. 512, t. c. ; *E. fumosaria*, p. 554, *sinuaria*,
caducaria, *vitiosaria*, *peararia*, p. 556, Trop. Africa, *roezaria*, Mada-
 gascar, p. 557, *cassaria*, Masai, p. 558, SWINHÖE, Tr. ent. Soc. London
 1904 : **n. spp.**
- Emplocia* = (*Devara* Walk.), WARREN, p. 96, Nov. Zool. xi.
- E. coliadata*, Peru, WARREN, p. 97, t. c. **n. sp.**
- Encoma* **n. g.** *irisaria* **n. sp.**, Uganda, SWINHÖE, p. 523, Tr. ent. Soc.
 London 1904.
- Encryphia* **n. g.** *argillina* **n. sp.**, Queensland, TURNER, p. 228, Tr. R. Soc.
 S. Austral. xxviii.
- Ennomos*, cf. *Tmetomorpha*.
- Entogonia* **n. g.** *Enochrominæ*, *E. schistacea* **n. sp.**, Bolivia, WARREN, p. 12,
 Nov. Zool. xi.
- Ephialtas fornax* ab. **n. latimargo**, WARREN, p. 16, t. c.
- Epiplema commixtata*, *pallifrons*, p. 2, *rectilinea*, p. 3, *rostrifera*, *scabra*,
 p. 4, *vulpecula*, p. 5, Peru, WARREN, t. c. ; *E. dohertyi*, *semipicta*,

- Mombasa, WARREN, p. 462, t. c.; *E. lucisquamata*, Peru, WARREN, p. 494, t. c. : **n. spp.**
- Epirrhoë heliopharia*, Uganda, SWINHOE, p. 569, Tr. ent. Soc. London 1904; *E. limitata*, Peru, WARREN, p. 517, Nov. Zool. xi : **n. spp.**
- Episothalma kabaria*, W. Africa, SWINHOE, p. 541, Tr. ent. Soc. London 1904, **n. sp.**
- Erateina cæruleopicta*, Peru, WARREN, p. 536, Nov. Zool. xi, **n. sp.**
- Ereboclora ruficostaria* ab. n. *semifumata*, WARREN, p. 517, t. c.
- E. ruficostaria* with var. *pernigrata*, p. 47, *sublactea*, p. 48, Peru, WARREN, t. c. **n. spp.**
- Eriophodes indistincta*, Santa Marta, WARREN, p. 173, t. c. **n. sp.**
- Eriopygidia isolata* Kaye (as *Arima*)=(*engelkei* Warr.), p. 517, *E. rufivena* ♀, p. 518, WARREN, t. c.
- E. engelkei*, Santa Marta, *locuples*, p. 49, *rufivena*, p. 50, Peru, WARREN, t. c.; *E. nigrirubrata*, Peru, WARREN, p. 518, t. c.; *E. subigneæ*, p. 359, *flavisquamata*, p. 360, S. America, DOGNIN, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Erosia dilacerata* Guen. to *Gathynia*, WARREN, p. 495, Nov. Zool. xi.
- Eubolia semilutata* ab. n. *fuscata*, HERZ, p. 374, pl. i, fig. 15, Annuaire Mus. St. Petersb. ix.
- Eubordeta* **n. g.** *E. meeki*, pl. iii, fig. 27, *eichhorni*, figg. 32, 33, *miranda*, fig. 34, New Guinea, **n. spp.** and including *Bord. hypocala*, pl. iii, fig. 26, ROTHSCHILD, Nov. Zool. xi.
- Euestia neddaria*, Uganda, SWINHOE, p. 574, Tr. ent. Soc. London 1904, **n. sp.**
- Euchloris periphRACTA*, p. 219, *argosticta*, *tanygona*, p. 220, *thalassica*, *leucospilata*, p. 221, *callisticha*, p. 222, Australia, TURNER, Tr. R. Soc. S. Austral. xxviii; *E. heterospila*, Bahamas, HAMPSON, p. 178, Ann. Nat. Hist. xiv : **n. spp.**
- Euchontha commixta*, *memor*, Peru, WARREN, p. 16, Nov. Zool. xi, **n. spp.**
- Eucymatoge peplodes*, p. 247, *scotodes*, p. 248, Queensland, TURNER, P. Soc. Victoria xvi; *E. ochrosoma*, Peru, WARREN, p. 86, Nov. Zool. xi; *E. albirivata*, p. 528, *decorata*, *longipennata*, p. 529, Peru, WARREN, t. c. : **n. spp.**
- Eudule flavinota*, *malefida*, S. America, WARREN, p. 81, t. c.; *E. arctiata*, *simulans*, Peru, WARREN, p. 541, t. c. : **n. spp.**
- Eugivira flavescens*, San Salvador, *gemina*, Merida, DOGNIN, p. 122, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Eulype albifusa*, Philippines, SWINHOE, p. 134, Ann. Nat. Hist. xiv, **n. sp.**
- Eumilonia* **n. g.** for *Milonia mediofasciata*, THIERRY-MIEG, p. 183, Naturaliste 1904.
- Euomæa carneata*, S. Africa, WARREN, p. 481, Nov. Zool. xi, **n. sp.**
- Eupagia nigerrima*, Abyssinia, SWINHOE, p. 526, Tr. ent. Soc. London 1904, **n. sp.**
- Eupithecia*; DIETZE figures and notices many varr. of Palæarctic, in addition to the n. spp. mentioned below, Deutsche ent. Zeitschr. Iris xvi, pp. 362–387, pls. iii, iv, v.
- E. cooptata*, pl. iv, figg. 24–27, South France, p. 335, *vacuata*, p. 336, pl. iii, fig. 2, *rubellata*, figg. 3–5, p. 337, Centr. Asia, *dæmoniata*, Japan, fig. 9, p. 339, *chesiata*, p. 340, figg. 13, 14, *diffusata*, p. 342, fig. 15, *vicariata*, p. 343, fig. 17, with var. *adjunctata*, p. 344, fig. 18, *relictata*, p. 345, fig. 19, *assectata*, p. 346, figg. 20, 21, Centr. Asia, *novata*, Taurus, p. 348, fig. 22, *recens*, p. 349, fig. 26, *scortillata*, p. 351, fig. 28, sp. ? fig. 29, p. 352, *extinctata*, p. 356, fig. 33, *illaborata*, fig. 34, p. 357, Centr. Asia, *dearmata*, Mesopotamia, p. 358, fig. 35, *laterata*, pl. iv, fig. 28, *concremata*, fig. 29, p. 360, Centr. Asia, DIETZE, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Eusenea castanea*, Peru, WARREN, p. 570, Nov. Zool. xi, **n. sp.**

- Eustroma nubilata*, life-history, DYAR, p. 29, Psyche xi.
- Eutomopepla fulgorifera*, Bolivia, WARREN, p. 139, Nov. Zool. xi; *E. brunnea*, Bolivia, DOGNIN, p. 367, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Exelis extorris*, Natal, WARREN, p. 482, Nov. Zool. xi; *E. fumida*, Colorado, WARREN, p. 581, t. c. **n. sp.**
- Fisera perplexata* = (*Criomacha belidearia* Feld.), WARREN, p. 492, Nov. Zool. xi.
- Fulguroides subnotata*, Peru, WARREN, p. 545, t. c. **n. sp.**
- Gabriola n. g. Ennominae*, p. 255, *G. dyari n. sp.*, Vancouver, p. 256, TAYLOR, Canad. Ent. xxxvi.
- Gagitodes plumbinotata*, Peru, WARREN, p. 519, Nov. Zool. xi, **n. sp.**
- Gastrina* Guen. = (*Passa* Walk.), *G. serrata* Walk. (as *Xylina*) = (*denticulata* Swinh.), SWINHOE, p. 133, Ann. Nat. Hist. xiv.
- G. catacticta*, Queensland, TURNER, p. 237, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Gelasma stigmatica*, Peru, WARREN, p. 20, Nov. Zool. xi, **n. sp.**
- Geolyces rufaria*, Old Calabar, SWINHOE, p. 519, Tr. ent. Soc. London 1904, **n. sp.**
- Gnophos obscurata* var. *n. mediorhenana*, pl. ii, fig. 13, p. 41, FUCHS, Jahrb. nassau. Ver. lvii; *G. lineolaria* ♀, pl. vi, fig. 21, p. 300, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi; *G. obfuscata*, *glaucinaria*, distinctions, PROUT, p. 121, Ent. Rec. xvi; *G. pentheri*, p. 282, pl. v, fig. 19, REBEL, Ann. Hofmus. Wien xix.
- G. orbicularia*, p. 297, pl. vi, fig. 16, *exsuctaria*, p. 298, fig. 17, Issyk-kul, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Gonanticlea subpilosa*, Batjan, WARREN, p. 488, Nov. Zool. xi, **n. sp.**
- Gonochlora n. g.* near *Iodis*, *G. minutaria n. sp.*, Sierra Leone, SWINHOE, p. 548, Tr. ent. Soc. London 1904.
- Gonodela leighi*, Durban, *interlineata*, p. 478, *transvisata*, p. 479, Angola, WARREN, Nov. Zool. xi, **n. spp.**
- Gonodontis bidentata* var. *n. exsul*, TSCHETVERIKOV, p. 78, Rev. Russe Ent. iv.
- G. azelinaria*, p. 526, *æmoniaria*, p. 527, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1904, **n. sp.**
- Grammicopteryx n. g.* for *Larentia anthocharidaria* Oberth., THIERRY-MIEG, p. 183, Naturaliste 1904.
- Gymnoscelis lophopus*, p. 224, *delocyma*, p. 226, *acidna*, p. 227, Australia, TURNER, P. Soc. Victoria xvi, **n. spp.**
- Gyostega n. g. Palyadinae*, p. 93, *G. floccosa n. sp.*, Peru, p. 94, WARREN, Nov. Zool. xi.
- Habrosyne scripta*, early stages, DYAR, p. 885, P. U. S. Mus. xxvii.
- Hæmalea atridiscata*, Peru, WARREN, p. 37, Nov. Zool. xi, **n. sp.**
- Haggardia n. g.* for part of *Eubyja*, with *H. melanostigma n. sp.*, Angola, WARREN, p. 473, t. c.
- Hamaptera æruginata*, Bolivia, *apicata*, p. 51, *nigrolineata*, Paraguay, *cacuminata*, Peru, p. 52, *subalbata*, Bolivia, p. 53, WARREN, t. c. **n. spp.**
- Hemerophila mailaria*, Congo, SWINHOE, p. 535, Tr. ent. Soc. London 1904; *H. brunnearia*, Korea, HERZ, p. 367, pl. i, fig. 5, Annuaire Mus. St. Petersb. ix; *H. alpinella*, p. 746, *kincaidiella*, p. 747, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii: **n. spp.**
- Hemicopsis n. g.* p. 525, *H. purpuraria n. sp.*, E. Africa, p. 526, SWINHOE, Tr. ent. Soc. London 1904.
- Hemigymnodes*, characters and position, WARREN, p. 17, Nov. Zool. xi.
- Hemiplothis ? alternata*, Peru, p. 5, *metallica*, Trinidad, p. 6, WARREN, t. c. **n. spp.**
- Hemithea sapoliaria*, Mombasa, SWINHOE, p. 547, Tr. ent. Soc. London 1904, **n. sp.**

- Hemixera* **n. g.** *Ennominae*, *H. orthosiodes* **n. sp.**, Peru, WARREN, p. 139, Nov. Zool. xi.
- Herbita amula*, *cervina*, Mexico, WARREN, p. 140, t. c. **n. spp.**
- Hetererannis* **n. g.** type *Boarmia obliquaria* Grote, WARREN, p. 106, t. c.
- Heterephyra pustulata*, Peru, WARREN, p. 37, t. c. **n. sp.**
- Heterorachis rubella*, Niger, WARREN, p. 465, t. c. **n. sp.**
- Heteroleuca* **n. g.** *Nephodiinae*, *H. albida* **n. sp.**, Peru, WARREN, p. 101, t. c.
- Heterolocha xerophilaria*, Ain-Dschidi, PÜNGELER, p. 295, pl. vi, fig. 13, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Heterusia amplificata*, Peru, *fractifascia*, *liturata*, Ecuador, p. 89, *ludisignata*, *subspurcata*, p. 90, *thyridata*, p. 91, Peru, WARREN, Nov. Zool. xi; *H. binotata* with var. *suffusa*, p. 536, Peru, *clarimargo*, Costa Rica, *tessellata*, Peru, p. 537, WARREN, t. c.; *H. picata*, Bolivia, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Heterusia*, see also *Bombyces*.
- Himeromima* **n. g.** for *Mecoceras aulis* Druce, WARREN, p. 141, Nov. Zool. xi.
- Hirasa*? *denticulata*, Natal, WARREN, p. 473, t. c. **n. sp.**
- Homospora* **n. g.** near *Arrhodia*, p. 229, *H. procerita* **n. sp.**, Townsville, p. 230, TURNER, Tr. R. Soc. S. Austral. xxviii.
- Hyalopola* **n. n.** for *Hyalospila* Warr., WARREN, p. 101, Nov. Zool. xi.
- Hyalorrhoe* **n. g.** near *Prohydata*, *H. stigmatica* **n. sp.**, Costa Rica, WARREN, p. 21, Nov. Zool. xi.
- Hydata diaphana*, Peru, WARREN, p. 86, t. c. **n. sp.**
- Hydatocapnia subapicata*, Niger, WARREN, p. 469, t. c. **n. sp.**
- Hydatoscia* **n. g.** type *Trygodes ategna* Druce, WARREN, p. 101, t. c.
- Hydriomena*, cf. *Rhodomene*.
- Hydriomena psarodes*, p. 253, *callima*, p. 257, *trissophrica*, p. 259, *crocota*, p. 261, *plagiocausta*, p. 263, *arachnitis*, p. 264, *plesia*, *loxocyma*, p. 265, Australia, TURNER, P. Soc. Victoria xvi; *H. ochreiplaga*, Colombia, WARREN, p. 53, Nov. Zool. xi; *H. scalata*, Oregon, WARREN, p. 519, t. c. : **n. spp.**
- Hygrochroma flexilinea*, p. 141, *subusta*, p. 142, Peru, WARREN, t. c.; *H. catenulata*, Bolivia, WARREN, p. 571, t. c. : **n. spp.**
- Hylemera auridisca*, p. 471, *capitifera*, p. 472, Niger, WARREN, t. c. **n. spp.**
- Hymenomima carneata*, *rufata*, p. 109, *schisticolor*, p. 110, Peru, WARREN, t. c. **n. spp.**
- Hyperitis trianguliferata*, p. 64, *H. amicaria*, p. 65, life-histories, DYAR, Psyche xi.
- Hyperythra rubricata* not a var. of *lutea*, ab. *n. decolor*, WARREN, p. 491, Nov. Zool. xi.
- Hyphedyle subornata*, Peru, WARREN, p. 499, t. c. **n. sp.**
- Hyphenophora amonia*, Uganda, SWINHOE, p. 498, Tr. ent. Soc. London 1904, **n. sp.**
- Hypochrosis ationaria*, Madagascar, SWINHOE, p. 522, t. c. **n. sp.**
- Hypolepis* **n. g.** near *Psaliodes*, *H. albistriga*, p. 54, *castanea*, *conspersata*, *plumbescens*, p. 55, *prunicolor*, *sordida*, p. 56, *strigosa*, p. 57, **n. spp.**, Peru, WARREN, Nov. Zool. xi; *H. brunneata*, *completa*, Peru, WARREN, p. 520, t. c. **n. spp.**
- Hypometalla* **n. g.** for *Acidalia mimetaria* Feld., WARREN, p. 563, t. c.
- Hyposidra smithi*, Congo, WARREN, p. 480, t. c. **n. sp.**
- Ira dislocata*, p. 142, *funerea*, *igni-plaga*, p. 143, *ochriplaga*, *opalizans*, p. 144, Peru, *somnolenta*, Colombia, *viridirufa*, Peru, p. 145, WARREN, t. c. **n. spp.**
- Iridopsis schistacea* ab. *n. radiata*, WARREN, p. 554, t. c.
- I. alternata*, p. 553, *striata*, p. 554, WARREN, t. c.; *I. candidata*, Bolivia, p. 110, *schistacea*, Peru, p. 111, WARREN, t. c.; *I. commixtata*,

- Tucuman, DOGNIN, p. 121, Ann. Soc. ent. Belgique xlviii; *I. rectura*, p. 363, *obliquata*, p. 364, Argentina, DOGNIN, t. c. : **n. spp.**
- Ischnopteris abnormipalpis*, p. 116, *albiguttata*, *fidelis*, p. 117, *oppositata*, p. 118, Peru, WARREN, Nov. Zool. xi; *I. albipennis*, p. 556, *discolor*, *festiva*, p. 557, *præluteata* with ab. n. *albirupta*, *viridifascia*, p. 558, Peru, WARREN, t. c. : **n. spp.**
- Ischnopteryx viriosa*, Peru, DOGNIN, p. 365, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Isochromodes atristicta* with ab. *dissipata*, p. 146, *auxilians* with var. *denotata*, p. 147, *crassa*, *fraterna*, p. 148, *grisea*, *latifascia*, p. 149, *pallidifimbria*, *palumbata*, p. 150, *terminata*, *vestigata*, p. 151, Peru, WARREN, Nov. Zool. xi; *I. duplicata*, *maculosata*, p. 572, *miniata*, p. 573, Peru, WARREN, t. c. : **n. spp.**
- Isodiscodes* **n. g.** *Hydriomeninæ*, *I. polycyma* **n. sp.**, Peru, WARREN, p. 521, t. c.
- Josia erectistria*, *longistria*, Ecuador, p. 17, *vulturata*, Peru, p. 18, WARREN, t. c. **n. spp.**
- Lampropteryx trilineata*, Colorado, WARREN, p. 57, t. c. **n. sp.**
- Larentiidae*, review of variation in, PROUT, pp. 151–156, Entomologist 1904.
- Larentia multistrigaria* varr., TUTT, pp. 303–305, Ent. Rec. xvi; *L. corydalaria* var. n. *bogumilaria*, REBEL, p. 267, pl. v, figg. 16, 17, Ann. Hofmus. Wien xix; *L. badiata* var. n. *alpestris*, NEUBURGER, p. 20, Soc. ent. xix; *L. corylata* var. n. *albida*, HERZ, p. 17, Ofv. Finska Forh. xlv, No. 15; *L. infidaria*, pl. iii, figg. 33–35, p. 68, *letaria*, fig. 36, *larentiaria*, p. 71, fig. 37, *cyanata*, figg. 38, 39, OBERTHÜR, Études comp. i.
- L. expiata*, Aksu, p. 292, pl. vi, fig. 9, *defricata*, Nikko, p. 293, fig. 10, *occata*, fig. 11, *querulata*, fig. 12, p. 294, Centr. Asia, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Lasiops*? *puechi*, Peru, DOGNIN, p. 368, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Leucoctenorrhoe* **n. g.** near *Amaurinia*, p. 526, *L. quadrilinea* **n. sp.**, Peru, p. 527, WARREN, Nov. Zool. xi.
- Leucolithodes* **n. g.** for *Bryoptera pantherata* Feld., WARREN, p. 582, t. c.
- Leucothoa persordida*, Bolivia, WARREN, p. 6, t. c. **n. sp.**
- Leucoreus* **n. g.** *Ænochrominæ*, p. 12, *L. rhodosticta* **n. sp.**, Peru, p. 13, WARREN, t. c.
- Leuculopsis bilineata*, Peru, WARREN, p. 101, t. c.; *L. approximans*, Peru, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Lignyopectera thaumastaria*, p. 278, pl. v, fig. 18, REBEL, Ann. Hofmus. Wien xix.
- Ligonia bottgeri*, Peru, WARREN, p. 513, Nov. Zool. xi, **n. sp.**
- Lipomelia scintillans*, Brit. Guiana, p. 37, *subfuscata*, Bolivia, p. 38, WARREN, t. c. **n. spp.**
- Lissochlora flavilimes*, Peru, WARREN, p. 21, t. c.; *L. punctata*, St. Lucia, WARREN, p. 504, t. c. : **n. spp.**
- Lomographa acutipennis*, *albifrons*, S. America, WARREN, p. 92, t. c. **n. spp.**
- Lophochorista* **n. g.** near *Hydata*, for *Racheospila calliope* Druce, WARREN, p. 22, t. c.
- Lophopygia* **n. g.** near *Lophotosoma*, *L. griseata* **n. sp.**, Peru, WARREN, p. 495, t. c.
- Lophotosoma* **n. g.** near *Epiplema*, *L. ustanalisis* **n. sp.**, Peru, WARREN, p. 7, t. c.
- Loxapicia* **n. g.** for part of *Apicia*, *L. humerata*, Bolivia, *straminea*, Ecuador, **n. spp.**, WARREN, p. 152, t. c.
- Loxaspilates bluethgeni*, Nikko, PÜNGELER, p. 299, pl. vi, fig. 19, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Lozogramma carneata*, *erubescens*, *sinuata*, Colorado, WARREN, p. 561, Nov. Zool. xi, **n. spp.**

- Luxiaria pudens*, Niger, SWINHÖE, p. 504, Tr. ent. Soc. London 1904, **n. sp.**
- Lycauges dapharia*, p. 552, *sevandaria*, *erinaria*, *commaria*, p. 553, Trop. Africa, SWINHÖE, t. c. **n. spp.**
- Lygris prunata* var. *n. digna*, THIERRY-MIEG, p. 141, Naturaliste 1904.
- Macaria minorata* var. *n. incolorata*, DYAR, p. 906, P. U. S. Mus. xxvii.
- M. bifilaria*, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv, **n. sp.**
- Malacodea regelaria* at St. Petersburg, characters, KUSNEZOV, pp. 40–43, cuts, Rev. Russe Ent. iv, & BLOECKER, p. 210, t. c.
- Marmopteryx elongata*, Peru, THIERRY-MIEG, p. 141, Naturaliste 1904, **n. sp.**
- Mecoceras*, cf. *Himeromima*.
- Melanchroia geometroides*, larva, DYAR, p. 77, P. ent. Soc. Washington vi.
- Melanippe rivata*, *fluctuata* varr., WOODBRIDGE, p. 9, cuts, Entomologist 1904.
- Melanoscia* **n. g.** near *Iridopsis*, p. 111, *M. albimacula*, *felina*, p. 112, *occlusa*, p. 113, **n. spp.**, Peru, WARREN, Nov. Zool. xi.
- Melanolophia canadaria* var. *n. subgenericata*, DYAR, p. 910, P. U. S. Mus. xxvii.
- Melinodes contacta*, Bolivia, WARREN, p. 153, Nov. Zool. xi; *M. subapicata*, Peru, p. 573, WARREN, t. c. : **n. spp.**
- Melochlora intermedia*, Peru, WARREN, p. 22, t. c. : *M. albiceps*, Peru, WARREN, p. 504, t. c. : **n. spp.**
- Merocausta purpuraria*, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv, **n. sp.**
- Mesedra* **n. g.** including *Apicia venusta* Dogn., *M. confinis*, p. 153, *juvenis*, *munda*, p. 154, *subsequa*, *violacea*, p. 155, **n. spp.**, WARREN, Nov. Zool. xi.
- Mesoleuca simulata* var. *n. otisi*, DYAR, p. 898, P. U. S. Mus. xxvii.
- Metallochloa circumscripta*, Solomon islds., WARREN, p. 486, Nov. Zool. xi, **n. sp.**
- Metanema quercivoria* and *Endropia tetrinaria* queried as one, TAYLOR, p. 134, Canad. Ent. xxxvi; *M. quercivoria* and *tetrinaria* are one, PEARSALL, p. 162, Canad. Ent. xxxvi; *M. fuliginosa* to *Mimogonodes*, WARREN, p. 576, Nov. Zool. xi.
- M. fuliginosa*, Peru, WARREN, p. 156, Nov. Zool. xi, **n. sp.**
- Miantonota decorata*, Huatuxco, WARREN, p. 22, Nov. Zool. xi; *M. nigri-squama*, Peru, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Microdes diplodonta*, Tasmania, TURNER, p. 239, P. Soc. Victoria xvi, **n. sp.**
- Microgonia affinis* ♀, *siccifolia* ♂, p. 574, *umbrosa* var. *n. interclarata*, p. 575, WARREN, Nov. Zool. xi.
- M. distans* and ab. *confusa*, p. 156, Bolivia, *guenei*, p. 157, Mexico, *siccifolia*, *subdecorata* with ab. *prunicolor*, p. 158, Peru, *subdentilinea*, Ecuador, *subductaria*, R. Cachabi, p. 159, *versilinea*, Bolivia, p. 169, WARREN, t. c.; *M. particolor*, Paramaribo, p. 574, *subumbrata*, Peru, p. 575, WARREN, t. c.; *M. diluta*, Paraguay, DOGNIN, p. 366, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Microxydia*? *colorata*, p. 160, *M. fulvicollis*, p. 161, Peru, WARREN, Nov. Zool. xi; *M. rufijimbriata*, p. 575, *strigosa*, p. 576, Peru, WARREN, t. c. : **n. spp.**
- Milionia aroensis*, pl. iii, fig. 41, *ventralis*, fig. 38, *parva*, fig. 30, *diva*, figg. 39, 40, New Guinea, ROTHSCHILD, p. 321, Nov. Zool. xi, **n. spp.**
- Milocera* **n. g.** near *Psilocladia*, *M. horaria* **n. sp.**, Madagascar, SWINHÖE, p. 522, Tr. ent. Soc. London 1904.
- Mimandria insularis*, Madagascar, SWINHÖE, p. 541, t. c. **n. sp.**
- Mimoprora* **n. g.** near *Isochromodes*, *M. rubra* **n. sp.**, Peru, WARREN, p. 161, Nov. Zool. xi.
- Mimosema flexa*, *rufa*, Peru, WARREN, p. 162, t. c. **n. spp.**
- Micopsis leodorata* Guen. (as *Cirsodes*) = (*Laudosia typtaria* Feld.), WARREN, p. 576, t. c.

- M. bella*, Peru, WARREN, p. 162, t. c.; *M. pulverata*, Peru, WARREN, p. 576, t. c. : **n. sp.**
- Monroa* **n. g.** for *Cymatophora*, *quinquelinearia* Pack., WARREN, p. 555, t. c.
- Morphomima* **n. g.** near *Celura*, p. 7, *M. fulvitacta* **n. sp.**, Colombia, p. 8, WARREN, t. c.
- Nearcha prosedra*, p. 226, *nephocrossa*, p. 227, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Nelo versicolor*, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904, **n. sp.**
- Nematocampa completa*, Ecuador, WARREN, p. 163, Nov. Zool. xi; *N. ? confusa*, *N. cuprina*, Peru, WARREN, p. 577, t. c. : **n. spp.**
- Nemoria afflictaria*, Sierra Leone, SWINHÖE, p. 549, Tr. ent. Soc. London 1904, **n. sp.**
- Neobapta* **n. g.** *Deiliniinæ*, p. 92, *N. indecora* **n. sp.**, Demarara, p. 93, WARREN, Nov. Zool. xi.
- Neocrasis heterograpta*, Peru, WARREN, p. 23, t. c. **n. sp.**
- Neodirades* **n. g.** *N. spurcata* **n. sp.**, Peru, WARREN, p. 8, t. c.
- Neodezia* **n. g.** for *Odezia albovittata*, WARREN, p. 541, t. c.
- Neofidonia* **n. g.** *Ascotineæ*, *N. nigristigma* **n. sp.**, Peru, WARREN, p. 113, t. c.; *N. olivescens*, Ecuador, WARREN, p. 555, t. c. : **n. sp.**
- Neonemoria* **n. g.** near *Neocrasis*, p. 23, *N. plana* **n. sp.**, Bolivia, p. 24, WARREN, t. c.
- Neoplema* **n. g.** near *Epiplema*, *N. candidata* **n. sp.**, Peru, WARREN, p. 496, t. c.
- Neopolita* **n. g.** *Deiliniinæ*, *N. bisecta* **n. sp.**, Angola, WARREN, p. 470, t. c.
- Neotaxia* **n. g.** p. 365, *N. plana* **n. sp.**, Tucuman, p. 366, DOGNIN, Ann. Soc. ent. Belgique xlviii.
- Nipteria apicilineata* Dogn. to *Heteroleuca*, WARREN, p. 545, Nov. Zool. xi.
- N. astychooides*, *flaviplaga*, *flebilis*, p. 102, *oblitaria*, Peru, *subocellata*, Bolivia, p. 103, *transducta*, *turpis*, p. 104, Peru, WARREN, Nov. Zool. xi; *N. basiplaga*, *dispana*, p. 546, *exclamationis*, *nigrisignata*, *occulta*, p. 547, *pallida*, *partita*, p. 548, *sibylla*, *trisepta*, p. 549, *unilinea vestigiata*, p. 550, Peru, WARREN, t. c.; *N. rotundata*, Ecuador, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Nyssia lapponaria*, COCKAYNE, pl. vi, pp. 149, 150, Entomologist 1904; *N. lapponaria*, variation, COCKAYNE, p. 249, cuts, t. c.
- Ochyria thorenaria*, Madagascar, SWINHÖE, p. 570, Tr. ent. Soc. London 1904, **n. sp.**
- Odontopera integraria* Guen. to *Colotois*, WARREN, p. 479, Nov. Zool. xi.
- Odontoptila marginata*, Bolivia, WARREN, p. 38, t. c. **n. sp.**
- Edicentra gerydaria*, Ashanti, SWINHÖE, p. 530, Tr. ent. Soc. London 1904, **n. sp.**
- Enone xenopis* cf. *Diceratucha*.
- Enoptila costata*, *filata*, *leprosata*, p. 120, *prunicolor*, p. 121, Peru, WARREN, Nov. Zool. xi; *Æ. ignea*, Peru, WARREN, p. 559, t. c. : **n. spp.**
- Oligopleura biplagiata*, Peru, WARREN, p. 58, t. c. **n. sp.**
- Oospila atroviridis*, Peru, WARREN, p. 24, t. c.; *O. restricta*, p. 504, *rufiplaga*, p. 505, Peru, WARREN, t. c. : **n. spp.**
- Ophthalmodes albata*, Sumatra, WARREN, p. 490, t. c. **n. sp.**
- Ophthalmophora contrariata*, p. 94, *lineata*, *orion*, p. 95, *transversata*, p. 96, Peru, WARREN, t. c. **n. spp.**
- Opisthoxia casta*, Mexico, *laticlava*, Peru, p. 542, *vigilans*, Ecuador, p. 543, WARREN, t. c. **n. spp.**
- Oreonoma* **n. g.** near *Heterusia*, *O. submarmorata* **n. sp.**, Peru, WARREN, p. 538, t. c.
- Orsonoba zapluta*, *luteola*, p. 234, *leucoprepes*, p. 235, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**

- Ortholitha bipunctaria* ab. n. *grisescens*, NEUBURGER, Soc. ent. xix, p. 44 ;
O. coarctata, early stages, habits, BRANTS, pp. 63-68, Tijdschr. ent. xlvii.
- Paracomistis subtractata* ♀, WARREN, p. 163, Nov. Zool. xi.
- P. plumosa*, Peru, WARREN, p. 578, t. c. **n. sp.**
- Paracomucha* **n. g.** near *Entephria*, for *Cidaria chalybearia* Moore, WARREN, p. 488, t. c.
- Paradoxodes* **n. g.** near *Pseustoplaca*, *P. subdecora* **n. sp.**, Peru, WARREN, p. 164, t. c.
- Paraplodes* **n. g.** near *Aplodes*, p. 24, *P. aurata* **n. sp.**, Ecuador, p. 25, WARREN, t. c.
- Paromala* **n. g.** near *Perizoma*, *P. elongata* **n. sp.**, Ecuador, p. 58, WARREN, t. c.
- Parourapteryx* **n. g.** for *Metrocampa sulphuraria* Maassen, THIERRY-MIEG, p. 183, Naturaliste 1904.
- Pergama semiusta* var.? *latifascia*, WARREN, p. 165, Nov. Zool. xi.
- P. plenilunata*, Peru, WARREN, l. c. **n. sp.**
- Peribolodes* **n. g.** *Fidoniinae*, *P. bicolorata* **n. sp.**, Brit. Guiana, WARREN, p. 126, t. c.
- Perigramma nigricosta*, p. 104, *semipleata*, p. 105, Bolivia, WARREN, t. c. **n. spp.**
- Perixera sublutina*, W. Africa, SWINHOE, p. 560, Tr. ent. Soc. London 1904 ; *P. impudens*, Galápagos, *P. ? longidiscata*, Townsville, WARREN, p. 487, Nov. Zool. xi : **n. spp.**
- Perizoma aspersa*, Ecuador, DOGNIN, p. 359, Ann. Soc. ent. Belgique xlviii ; *P. amplata*, *aureoviridis*, p. 59, *mirifica*, p. 60, Peru, WARREN, Nov. Zool. xi : **n. spp.**
- Pero olivacea*, Tucuman, WARREN, p. 578, t. c. **n. sp.**
- Perusia complicata*, p. 165, *graphica*, *superstes*, p. 166, Peru, WARREN, t. c. ; *P. subsordida*, Peru, WARREN, p. 579, t. c. : **n. spp.**
- Petelia anagogaria*, *binigrata*, p. 122, *purpurea*, p. 123, Peru, WARREN, t. c. ; *P. glabra*, Niger, WARREN, p. 476, t. c. : **n. spp.**
- Petrodava marginata*, Abyssinia, SWINHOE, p. 503, Tr. ent. Soc. London 1904, **n. sp.**
- Phæochlæna bialbifera*, Ecuador, WARREN, p. 18, Nov. Zool. xi, **n. sp.**
- Phellinodes leucophasiata*, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904 ; *P. interrupta*, *obstructa*, *uniformis*, Bolivia, WARREN, p. 14, Nov. Zool. xi ; *P. absentimacula*, Ecuador, *albifascia*, Peru, WARREN, p. 499, t. c. : **n. spp.**
- Phlebosphales* **n. g.** near *Anticlea*, p. 60, *P. engelkei*, Santa Marta, **n. sp.**, p. 61, WARREN, t. c.
- Phorodesma triangularia*, Madagascar, SWINHOE, p. 551, Tr. ent. Soc. London 1904, **n. sp.**
- Phrygonis modesta*, Minas Geraës, WARREN, p. 91, Nov. Zool. xi ; *P. argyrosticta*, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv : **n. spp.**
- Phyllodonta songaria*=(*semicava* Warr.) var. n. *obscura*, DOGNIN, p. 366, Ann. Soc. ent. Belgique xlviii.
- P. carneata*, p. 166, *puritana*, p. 167, *semicava*, *vivida*, p. 168, Peru, WARREN, Nov. Zool. xi ; *P. pseudonyma*, Peru, WARREN, p. 579, t. c. : **n. spp.**
- Pigia semicostata*, Peru, WARREN, p. 39, t. c. **n. sp.**
- Pisoraca sanguinata*, Durban, WARREN, p. 467, t. c. **n. sp.**
- Plerocymia multilinearia*, E. Africa, SWINHOE, p. 567, Tr. ent. Soc. London 1904, **n. sp.**
- Pleurotopha* **n. g.** near *Selidosema*, *P. nebridota* **n. sp.**, Brisbane, TURNER, p. 233, Tr. R. Soc. S. Austral. xxviii.
- Pæcilochlora* **n. g.** *Geometrinae*, p. 505, *P. minor* **n. sp.**, Peru, p. 506, and *Neocrasis heterograptæ* Warr., WARREN, Nov. Zool. xi.

- Polla quadrilineata* to *Sphacelodes*, WARREN, p. 172, t. c.
Polyplocia flavicornis haverkampfi, p. 187, pl. i, HAVERKAMPF, Ann. Soc. ent. Belgique xlviii.
Polypoetes picaria, Peru, WARREN, p. 18, Nov. Zool. xi; *P. fuliginosa*, Bolivia, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii : **n. spp.**
Porona fidoniata, Peru, WARREN, p. 560, Nov. Zool. xi, **n. sp.**
Prasinocyma ampla, pictifimbria, Angola, WARREN, p. 465, t. c. **n. spp.**
Prasinocyma pulchraia, W. Africa, p. 544, *asyllaria*, Madagascar, p. 545, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
Problepsis flavistigma, Trop. Africa, SWINHÖE, p. 564, t. c. **n. sp.**
Probolosceles punctaria, Madagascar, SWINHÖE, p. 550, t. c. **n. sp.**
Procypha sillaria, p. 514, *informis*, p. 515, W. Africa, SWINHÖE, t. c. **n. spp.**
Prorocrania n. g., p. 225, *argyritis n. sp.*, W. Australia, p. 226, TURNER, Tr. R. Soc. S. Austral. xxviii.
Prostoma n. g. Scotopteryginae, P. fragilis n. sp., WARREN, p. 123, Nov. Zool. xi.
Provola n. g. for *Aletis postica* Walker, SWINHÖE, p. 538, Tr. ent. Soc. London 1904.
Psaliodes serratilinea to *Hypolepis*, WARREN, p. 521, Nov. Zool. xi.
P. acutangula, p. 61, *albidulata, aurativena*, p. 62, *citrinata, clathrata*, p. 63, *fractilinea*, p. 64, *ignivenata, inferna*, p. 65, *miniata* (with varr. *fuscata, pallida*), *nevilinea*, p. 66, *nictitans, ossicolor*, p. 67, *pervasata, picta*, p. 68, Peru, *planiplaga*, Costa Rica, *semivasa*, p. 69, *serratilinea, siennata*, p. 70, Peru, *subfulvescens*, Ecuador, *trilunata*, Bolivia, p. 71, *tripartita*, p. 72, *vinosata*, p. 73, Peru, WARREN, t. c.; *P. analiplaga, lilacina*, p. 522, *nodosa, vulpina*, p. 523, Peru, WARREN, t. c.; *P. luticlara*, Peru, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : **n. spp.**
Psamathia impunctata, Peru, WARREN, p. 496, Nov. Zool. xi, **n. sp.**
Pseudapicia muscivaria, p. 169, *sororecula*, p. 170, Peru, WARREN, t. c. **n. spp.**
Pseudasellodes n. g. near *Asellodes*, p. 39, *P. constellata n. sp.*, Peru, p. 40, WARREN, t. c.
Pseudocrociniis n. g. type *Crociniis plana* Butl., SWINHÖE, p. 518, Tr. ent. Soc. London 1904.
Pseudosterrha lucidaria, Trop. Africa, SWINHÖE, p. 566, t. c. **n. sp.**
Pseudoterpna bryophanes, p. 222, *myriosticta*, p. 223, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
Psilocerea vestitaria, Madagascar, *umbrosaria*, Uganda, p. 520, *ancaria, dysonaria*, Madagascar, p. 521, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
Psodopsis n. g. P. incommoda n. sp., Bolivia, WARREN, p. 560, Nov. Zool. xi.
Psodos alticolaria faucium, p. 66, fig. 44, OBERTHÜR, Études comp. i.
Pterocypha abbreviata, Paraguay, WARREN, p. 73, Nov. Zool. xi, **n. sp.**
Ptochophyle subumbrata, Niger, WARREN, p. 467, t. c. **n. sp.**
Ptychopoda lalasaria, fylloidaria, Trop. Africa, SWINHÖE, p. 559, Tr. ent. Soc. London 1904; *P. circumsticta, torrida*, Angola, *minimaria*, Mombasa, WARREN, p. 468, Nov. Zool. xi; *P. curtaria*, Jamaica, *griseocostata*, Ecuador, p. 40, *inanis*, Jamaica, *lignicolor*, Colombia, *nepticulata*, Venezuela, p. 42, *nigricosta*, Peru, p. 42, WARREN, t. c.; *P. interalbulata*, N. W. Australia, p. 487, *muricolor*, Tonkin, p. 488, WARREN, t. c.; *P. tæniolata*, Peru, WARREN, p. 513, t. c. : **n. spp.**
Pycnoneura turpis, Bolivia, WARREN, p. 13, t. c.; *P. convergens*, Inambari, WARREN, p. 493, t. c. : **n. spp.**
Pyrinia formosa, Peru, p. 170, *junctaria*, Bolivia, p. 171, WARREN, t. c.; *P. derasata*, Peru, WARREN, p. 580, t. c. : **n. spp.**
Racheospila dependens, p. 25, *molliculata, promontoria*, p. 26, Peru, WARREN, t. c.; *R. conflua*, Peru, WARREN, p. 506, t. c. : **n. spp.**

- Rambara syllaria*, p. 575, *thearia*, p. 576, W. Africa, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Rhinura* **n. g.** for *Plemysriopsis variegata* Warr., WARREN, p. 74, Nov. Zool. xi.
- Rhodochlora albigmacula*, St. Lucia, WARREN, p. 506, t. c. **n. sp.**
- Rhodomene* **n. g.** for part of *Hydriomena*, *R. lichenosa*, p. 74, *roseoviridis*, p. 75, **n. spp.**, Peru, WARREN, t. c.
- Rhodophthitus castus*, Angola, WARREN, p. 471, t. c. **n. sp.**
- Rhopalista dismutata*, Tucuman, WARREN, p. 75, t. c. **n. sp.**
- Rhopalodes perfusa*, Peru, WARREN, p. 527, t. c. **n. sp.**
- Sabulodes arcasaria*, life-history, SEIFERT, pp. 103-105, Canad. Ent. xxxvi.
- Saccoploca* **n. g.**, p. 8, *S. consimilis*, *excisa* **n. spp.**, Peru, p. 9, WARREN, Nov. Zool. xi; *S. ? divergens*, p. 496, *S. sordida*, p. 497, Peru, WARREN, t. c. : **n. spp.**
- Sangala aenea*, *regia*, Peru, WARREN, p. 98, t. c. **n. spp.**
- Sangalopsis curvifera*, Ecuador, *crecens*, *ficifera*, Peru, p. 99, *flaviplaga*, *signigera*, Bolivia, *luteiplaga*, Ecuador, *fulvimedia*, Peru, p. 100, WARREN, t. c.; *S. velutina*, Peru, WARREN, p. 544, t. c. : **n. spp.**
- Sarracena brevilinea*, Peru, WARREN, p. 524, t. c. **n. sp.**
- Scea semifulva*, Ecuador, WARREN, p. 19, t. c. **n. sp.**
- Sciagraphia gilletteata*, Colorado, DYAR, p. 105, P. ent. Soc. Washington vi, **n. sp.**
- Scioglyptis emmelodes*, Queensland, TURNER, p. 232, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Scordylia emporias*, Brisbane, TURNER, p. 245, P. Soc. Victoria xvi; *S. pacifica*, Bolivia, *amica*, Peru, THIERRY-MIEG, p. 183, Naturaliste 1904 : **n. spp.**
- Scotocyma* **n. g.** for *Scotosia albinotata* Walk., TURNER, p. 245, P. Soc. Victoria xvi.
- Scotorythra dissotis*, p. 351, *metacrossa*, p. 352, *paratactis*, p. 353, *leptias*, p. 354, Hawaiian islands, MEYRICK, Fauna Hawaiiensis iii, **n. spp.**
- Selidosema humarium* var. *n. emasculatum*, DYAR, p. 910, P. U. S. Mus. xxvii.
- S. combustaria*, Palestine, PÜNGELER, p. 298, pl. vi, fig. 18, Deutsche ent. Zeitschr. Iris xvi; *S. crassata*, Durban, *pinguis*, Angola, WARREN, p. 477, Nov. Zool. xi; *S. symmorpha*, *leucodesma*, Queensland, TURNER, p. 231, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Semaopis signifer*, Bolivia, WARREN, p. 42, Nov. Zool. xi; *S. carnearia*, p. 513, Peru, *incolorata*, Bolivia, p. 514, WARREN, t. c.; *S. micropsis*, Bahamas, HAMPSON, p. 179, Ann. Nat. Hist. xiv : **n. spp.**
- Semiothisa sherrata*, Congo, p. 505, *cararia*, p. 507, *tatturia*, *instructaria*, p. 508, *ovidaria*, *arhoparia*, p. 509, *butaria*, p. 510, E. Africa, SWINHÖE, Tr. ent. Soc. London 1904; *S. natalensis*, Durban, WARREN, p. 479, Nov. Zool. xi; *S. indentata*, *intensata*, Peru, *nigricomma*, Guadalajara, WARREN, p. 127, t. c.; *S. formosa*, Peru, WARREN, p. 562, t. c. : **n. spp.**
- Sicya ennomaria*, Mexico, WARREN, p. 171, t. c. **n. sp.**
- Simopteryx obliterata*, Bolivia, WARREN, p. 172, t. c. **n. sp.**
- Sinoa nubilaria* var. *knapfferi*, HOYNINGEN-HUENE, p. 30, Berlin. ent. Zeitschr. xlix.
- Somatina accraria*, W. Africa, SWINHÖE, p. 565, Tr. ent. Soc. London 1904, **n. sp.**
- Spargania दौरa* Dr. (as *Epirrhoë*)=*bellipicta* Warr., WARREN, p. 76, Nov. Zool. xi.
- S. intensa*, p. 76, *rufifimbria*, *schistacea*, p. 77, *semipallida*, p. 78, Peru, WARREN, t. c. **n. spp.**
- Spilocraspeda* merged in *Isochromodes*, WARREN, p. 146, t. c.
- Spododes basipunctata*, Mexico, WARREN, p. 580, t. c. **n. sp.**
- Stamnodes mirifica*, Peru, THIERRY-MIEG, p. 140, Naturaliste 1904, **n. sp.**

- Stegania minutissima*, E. Africa, p. 500, *rubida*, Madagascar, p. 501, SWINHOE, Tr. ent. Soc. London 1904, **n. spp.**
- Stenalcidia latimedia* ab. n. *circumfumata*, WARREN, p. 556, Nov. Zool. xi.
- S. fumibrunnea, guttata*, Bolivia, p. 114, *latimedia*, Peru, p. 115, WARREN, t. c. ; *S. invenusta*, Tucuman, DOGNIN, p. 121, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Stenoplastis albifrons*, Bolivia, p. 501, *semimaculata*, Peru, p. 502, WARREN, Nov. Zool. xi, **n. spp.**
- Stenoplastis spumata*, Bolivia, WARREN, p. 19, Nov. Zool. xi, **n. sp.**
- Sterrhia hispidata*, Angola, WARREN, p. 469, t. c. **n. sp.**
- Stilbia faillæ*, fig. 22, *philopalis*, fig. 23, *calberlæ*, fig. 24, PÜNGELER, pl. vi, p. 300, Deutsche ent. Zeitschr. Iris xvi.
- Synelys impunctata*, Colorado, WARREN, p. 514, t. c. **n. sp.**
- Syngria candidata*, Peru, WARREN, p. 497, t. c. **n. sp.**
- Synneuria ditissima*, Peru, THIERRY-MIEG, p. 141, Naturaliste 1904, **n. sp.**
- Syrtodes* limited and redescribed, WARREN, p. 124, Nov. Zool. xi.
- Systatica* **n. g.** for *Monoctenia xanthastis* Low., TURNER, p. 229, Tr. R. Soc. S. Austral. xxviii.
- Tachyphyle subaurata*, Peru, WARREN, p. 27, Nov. Zool. xi ; *T. æretincta*, Peru, WARREN, p. 507, t. c. : **n. spp.**
- Tallegda montanata* var. n. *magnoliatoidata*, DYAR, p. 889, P. U. S. Mus. xxvii.
- Tanaorhinus humidaria*, Madagascar, SWINHOE, p. 542, Tr. ent. Soc. London 1904, **n. sp.**
- Taxeotis acrothecta*, p. 223, *orphanina, adelpha*, p. 224, *epigæa*, p. 225, Australia, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Tephrina presbitaria*, p. 511, *olindaria*, p. 512, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1905 ; *T. disparata*, Colorado, WARREN, p. 562, Nov. Zool. xi : **n. spp.**
- Tephrinopsis fragilis*, Peru, WARREN, p. 562, t. c. **n. sp.**
- Tephrocystia breviculata*, natural history, CHRÉTIEN, pp. 5-7, Naturaliste 1904.
- T. tomillata*, Segovia, CHRÉTIEN, p. 133, Bull. Soc. ent. France 1904 ; *T. orbaria*, p. 571, *mendosaria, perculsaria*, p. 572, *lugubriaria*, p. 573, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1904 ; *T. niphadophilata, cootenaiata*, p. 890, *casloata, columbiata, bifasciata*, p. 891, *subfoveata*, p. 892, British Columbia, DYAR, P. U. S. Mus. xxvii ; *T. curvifascia*, Jamaica, *costivallata, rubellicincta*, p. 87, *trigenuata*, Peru, *spurcata*, Chile, p. 88, WARREN, Nov. Zool. xi ; *T. brunneicosta, casta*, p. 530, *cupreata, densicauda, erectinota*, p. 531, Peru, *magnipuncta*, Bolivia, *nigrithorax*, p. 532, *pallidicosta*, p. 533, *seminigra, suffecta, triangulifera*, p. 534, Peru, WARREN, t. c. : **n. spp.**
- Tephronia? novella*, Ecuador, WARREN, p. 115, t. c. **n. sp.**
- Tetracis inquinata*, Peru, WARREN, p. 581, t. c. **n. sp.**
- Thalaina angulosa*, larva and pupa, GOUDIE, p. 111, Victorian Natural. xxi.
- Thalassodes nivestrata* (1903), pl. iii, fig. 36, ROTHSCHILD, Nov. Zool. xi.
- T. salutaria*, Uganda, SWINHOE, p. 544, Tr. ent. Soc. London 1904, **n. sp.**
- Thalera? turpisaria*, W. Africa, SWINHOE, p. 546, t. c. **n. sp.**
- Thamnonoma nubilata*, Colorado, WARREN, p. 563, Nov. Zool. xi, **n. sp.**
- Therina somniaria*, larva, DYAR, p. 76, P. ent. Soc. Washington vi.
- Thyatira dinawa*, pl. v, fig. 43, p. 381, *ekeikei*, pl. iv, fig. 31, p. 382, New Guinea, BETHUNE-BAKER, Nov. Zool. xi ; *T. godalma*, Mexico, SCHAUS, p. 152, T. Amer. ent. Soc. xxx : **n. spp.**
- Thysanocraspeda* **n. g.** *Epipleminæ*, p. 9, *T. geminipuncta, inornata, semicastanea*, p. 10, *squamiplaga*, p. 11, **n. spp.**, Peru, WARREN, Nov. Zool. xi.
- Thysanoctena* **n. g.** for *dormita* Schaus, WARREN, p. 535, t. c.

- Thysanopyga fulvifascia*, Ecuador, p. 124, *suffecta*, Bolivia, p. 125, WARREN, t. c. **n. spp.**
- Tithraustes aliena*, Bolivia, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii; *T. subalbata*, Bolivia, DOGNIN, p. 358, t. c. : **n. spp.**
- Tmetomorpha* **n. g.** for *Ennomos bitias* Druce, WARREN, p. 173, Nov. Zool. xi.
- Tracheops bolteri* ♀, DYAR, p. 106, P. ent. Soc. Washington vi.
- Traminda variegata*, Trop. Africa, SWINHÖE, p. 562, Tr. ent. Soc. London 1904, **n. sp.**
- Trichoclystis* **n. g.** near *Tephroclystia*, *T. peregrina* **n. sp.**, Peru, WARREN, p. 535, Nov. Zool. xi.
- Trichosterrha* **n. g.** near *Sterrha*, *T. ? brunneofasciata*, *dentatilinea*, Venezuela, *T. olivata*, Peru, **n. spp.**, WARREN, p. 515, t. c.
- Trigonomelea* **n. g.** *Ascotinea*, *T. semifusca* **n. sp.**, Durban, WARREN, p. 475, t. c.
- Triphosa ochricostata*, *uniplaga*, Peru, WARREN, p. 524, t. c. **n. sp.**
- Trotorhombia* **n. g.** for *Erosia metachromata* Walk., WARREN, p. 498, t. c.
- Uliura* **n. g.** near *Pæcilaicis*, *U. pallidimargo* **n. sp.**, Tonkin, WARREN, p. 491, t. c.
- Urocalpe* **n. g.** near *Plemyriopsis*, p. 78, *U. nigriplaga* **n. sp.**, Peru, p. 79, WARREN, t. c.
- Venilia pulcheraria*, Korea, HERZ, p. 362, pl. i, fig. 2, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Xanthomima isabellina*, Isabel Isld., WARREN, p. 489, Nov. Zool. xi, **n. sp.**
- Xanthorhoe agelasta*, p. 272, *clascia*, p. 275, Australia, TURNER, P. Soc. Victoria xvi, **n. spp.**
- Xenostega sinna*, *tyana*, Old Calabar, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Zamaera diaphanaria*, Askhabad, PÜNGELER, p. 295, pl. vi, fig. 14, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Zamarada ilaria*, *rufilinearia*, p. 516, *ixiaria*, *phrontisaria*, p. 517, Trop. Africa, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Zeuctoneura subviridis*, Peru, WARREN, p. 43, Nov. Zool. xi, **n. sp.**
- Zeuctophlebia tapinodes*, Queensland, TURNER, p. 228, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Zeuctostyla* **n. g.** near *Perigramma*, *Z. rubricollis* **n. sp.**, Peru, WARREN, p. 105, Nov. Zool. xi.

PYRALIDÆ, THYRIDIDÆ.

[Cf. DOGNIN (398), DYAR (424, 432, 434, 436, 438), HAMPSON (653), HOLE (696), JORDAN (771), MEYRICK (947, 948), PETRY (1039), REBEL (1122), SAUBER (1212), SCHAUS (1225), SWINHÖE (1361, 1364), TURNER (1410), VAN DEVENTER (1428), WARREN (1474-1477).]

Revision of Australian *Pyralidæ* and *Thyrididæ*, TURNER, P. Soc. Queensland xviii. The synonymy and taxonomical changes of this memoir are not dealt with below.

DYAR gives notes on the *Phycitinae* of the Hulst collection, for which reference must be made to P. ent. Soc. Washington vi, pp. 227-229.

Ambesa busckella, Maryland, DYAR, p. 108, P. ent. Soc. Washington vi, **n. sp.**

Ampycophora haploschema, Queensland, TURNER, p. 117, P. Soc. Queensland xviii, **n. sp.**

Anaclastus **n. g.** for *Crambus apicistrigellus* Meyr., TURNER, p. 164, t. c.

Anerastria eurysticha, Queensland, TURNER, p. 119, t. c. **n. sp.**

Anerastidia ebenopasta, Queensland, TURNER, p. 122, t. c. **n. sp.**

- Anisothrix grenadensis*, Grenada, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Arnatula tympanophora*, Queensland, TURNER, p. 193, P. Soc. Queensland xviii, **n. sp.**
- Asopia manihotalis*, early stages, VAN DEVENTER, p. 79, pl. ix, fig. 1, Tijdschr. Ent. xlv.
- Atascosa quadricolorella*, New Mexico, DYAR, p. 116, P. ent. Soc. Washington vi, **n. sp.**
- Azochis rufidiscalis*, Bahamas, HAMPSON, p. 186, Ann. Nat. Hist. xiv, **n. sp.**
- Banisia salmo*, Borneo, WARREN, p. 483, Nov. Zool. xi, **n. sp.**
- Bonchis magnalis*, Mexico, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Bostra disticha*, Queensland, TURNER, p. 190, P. Soc. Queensland xviii, **n. sp.**
- Bradina opacusalis*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Cabnia n. g. C. myronella n. sp.*, Washington, DYAR, p. 108, J. N. York Ent. Soc. xii.
- Cacotherapia n. g. for Aurora nigrocinereella* Hulst, DYAR, p. 160, P. ent. Soc. Washington vi.
- Caphys titana*, Mexico, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Catadupa viridiplaga*, Parana, SCHAUS, p. 177, t. c. **n. sp.**
- Caudellia n. g. near Unadilla, C. apyrella, albovitella n. spp.*, N. America, DYAR, p. 116, P. ent. Soc. Washington vi.
- Cecidipta abnormalis*, Bolivia, DOGNIN, p. 123, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Ceroprepes mnariopsis*, Queensland, TURNER, p. 151, P. Soc. Queensland xviii, **n. sp.**
- Chilo oxyprora*, Victoria, TURNER, p. 167, t. c. **n. sp.**
- Chrysauge jonesalis*, Parana, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Coregyra asthenitis*, Townsville, TURNER, p. 155, P. Soc. Queensland xviii, **n. sp.**
- Crambus lithargyrellus* var. *n. domaviellus*, pl. v, fig. 20, p. 304, REBEL, Ann. Hofmus. Wien xix.
- C. xerxes*, Anklam, SAUBER, p. 108, Verh. Ver. Hamburg Unterh. xii; *C. plumbifimbrialis, murellus*, British Columbia, DYAR, p. 919, P. U. S. Mus. xxvii : **n. spp.**
- Cryptoblates plagioteuca, adoceta*, Queensland, TURNER, p. 150, P. Soc. Queensland xviii, **n. spp.**
- Desmia microstictalis*, Bahamas, HAMPSON, p. 184, Ann. Nat. Hist. xiv, **n. sp.**
- Diptychophora stenura*, p. 168, *molydocrossa*, p. 169, *alypophanes, dialeuca*, p. 170, Queensland, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Dysodia flammata*, Zomba, WARREN, p. 461, Nov. Zool. xi, **n. sp.**
- Ecbletodes n. g. near Homæosoma*, p. 124, *E. psephenias n. sp.*, Brisbane, p. 125, TURNER, P. Soc. Queensland xviii.
- Endotricha chionocosma*, p. 182, *psammitis*, p. 183, *hemicausta*, p. 184, Australia, TURNER, t. c. **n. spp.**
- Ephestia cahiritella*, early stage, VAN DEVENTER, p. 80, pl. ix, fig. 2, Tijdschr. Ent. xlv.
- E. nonparilella*, Arizona, DYAR, p. 113, P. ent. Soc. Washington vi; *E. amarella*, British Columbia, DYAR, p. 921, P. U. S. Mus. xxvii : **n. spp.**
- Ephesiodes benjaminella*, British Columbia, DYAR, p. 922, t. c. **n. sp.**
- Epipaschia superantalis*, p. 249, *zelleri*, p. 250, early stages, DYAR, J. N. York Ent. Soc. xii.
- E. crypserythra*, Tasmania, TURNER, p. 198, P. Soc. Queensland xviii, **n. sp.**
- Eurhythmia n. g. for Platytes latifasciella* Hamps., TURNER, p. 168, t. c.

- Eurypta viridis*, Parana, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, **n. sp.**
Eutrichocera n. g. Phycitinae for *paurolepidalis n. sp.*, Bahamas, HAMPSON, p. 182, Ann. Nat. Hist. xiv.
Euzophera gigantella=(*cinerella* Hulst), DYAR, p. 158, P. ent. Soc. Washington vi.
Euzopherodes leptocosma, Townsville, TURNER, p. 127, P. Soc. Queensland xviii; *E. megalopalidis*, Bahamas, HAMPSON, p. 181, Ann. Nat. Hist. xiv : **n. spp.**
Gephyra costinotata, Peru, *gulgula*, Parana, SCHAUS, p. 175, Tr. Amer. ent. Soc. xxx, **n. spp.**
Glyphodes intermedialis, Paraguay, DOGNIN, p. 129, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Herculia acerasta, Queensland, TURNER, p. 189, P. Soc. Queensland xviii, **n. sp.**
Heterobella n. g. near *Macalla*, p. 193, *H. triglochis n. sp.*, Queensland, p. 194, TURNER, t. c.
Heteromicta poliostola, Queensland, TURNER, p. 158, t. c. **n. sp.**
Homæosoma stenopis, Victoria, *farinaria*, Tasmania, TURNER, p. 126, t. c.; *H. reliquellum*, New Hampshire; DYAR, p. 112, P. ent. Soc. Washington vi : **n. spp.**
Hymenia exodias, Molokai, MEYRICK, p. 150, Ent. Mag. xl, **n. sp.**
Hyperectis n. g., p. 356, near *Stenia, dioctias n. sp.*, Maui, p. 357, MEYRICK, Fauna Hawaiiensis iii.
Hyphantidium apodectum, seminivale, p. 129, *pamphæes*, p. 130, Queensland, TURNER, P. Soc. Queensland xviii, **n. spp.**
Hypolamprus tessellata, Sumatra, SWINHOE Ann. Nat. Hist. xiv, **n. sp.**
Hypolophota n. g. Gallerianæ, H. oödes, p. 155, *amydrastis*, p. 156, **n. spp.**, Queensland, TURNER, P. Soc. Queensland xviii.
Hypsotropa pleurosticha, p. 115, *icasmopis, rhodosticha*, p. 116, *zophopleura, acidrias*, p. 117, Australia, TURNER, t. c. **n. spp.**
Lætilia=(*Laosticha* Rag.), DYAR, p. 159, P. ent. Soc. Washington vi.
L. fiskeella, N. Carolina, DYAR, p. 221, t. c. **n. sp.**
Lepidomys sobria, Paraguay, DOGNIN, p. 126, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Leucinodes labefactalis, Borneo, SWINHOE, p. 158, Tr. ent. Soc. London 1904, **n. sp.**
Leucochroma neutralis, Ecuador, DOGNIN, p. 127, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Loxiorkhiza n. g. for *Zenzerodes cervinalis* Pag., WARREN, p. 494, Nov. Zool. xi.
Lygropia fusalis, Bahamas, HAMPSON, p. 186, Ann. Nat. Hist. xiv, **n. sp.**
Macalla zophera, p. 196, *ebenina*, p. 197, Queensland, TURNER, P. Soc. Queensland xviii; *M. admotalis*, p. 122, *albulatalis*, p. 123, S. America, DOGNIN, Ann. Soc. ent. Belgique xlvi : **n. spp.**
Margaronia amicalis, E. Africa, *cleonadalis*, Borneo, SWINHOE, p. 157, Tr. ent. Soc. London 1904, **n. spp.**
Megasis caudellella, piperella, N. America, DYAR, p. 110, P. ent. Soc. Washington vi, **n. spp.**
Meroptera liquidambarella, Washington, DYAR, p. 108, t. c. **n. sp.**
Mesolia scythrastis, Queensland, TURNER, p. 164, P. Soc. Queensland xviii, **n. sp.**
Mestolobes antichora, Oahu, MEYRICK, p. 361, Fauna Hawaiiensis iii; *M. sicaria*, Molokai, MEYRICK, p. 131, Ent. Mag. xl : **n. spp.**
Mimorista longidentalis, Peru, *pellucidalis*, Ecuador, DOGNIN, p. 128, Ann. Soc. ent. Belgique xlvi, **n. spp.**
Morora ? innotata, Townsville, WARREN, p. 483, Nov. Zool. xi, **n. sp.**
Nachaba fluella, aromalis, arouva, p. 176, *N. ? violascens*, p. 177, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**

- Nacoleia albicinctalis*, p. 184, *infuscalis*, *binocularis*, p. 185, Bahamas, HAMPSON, Ann. Nat. Hist. xiv, **n. spp.**
- Nephopteryx syntaractis*, p. 145, *epicrypha*, p. 147, Queensland, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Niphostola punctata*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Noorda candidalis*, Ecuador, DOGNIN, p. 131, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Nyctereutica* **n. g.** type *N. asbolopsis* **n. sp.**, Queensland, TURNER, p. 192, P. Soc. Queensland xviii.
- Ollia* **n. g.**, p. 107, *O. santaritella* **n. sp.**, Arizona, p. 108, DYAR, J. N. York Ent. Soc. xii.
- Omiodes accepta*, larva, DYAR, p. 65, P. ent. Soc. Washington vi.
- O. antidoxa*, Oahu, MEYRICK, p. 358, Fauna Hawaiensis iii, **n. sp.**
- Omphaloptera virginalis*, *completalis*, p. 126, *O. ? stigmatalis*, p. 127, S. America, DOGNIN, Ann. Soc. ent. Belgique xlvi, **n. spp.**
- Orthaga orchidivora*, Queensland, TURNER, p. 199, P. Soc. Queensland xviii, **n. sp.**
- Ortholepis gillettella*, Colorado, DYAR, p. 107, P. ent. Soc. Washington vi, **n. sp.**
- Pachyzancla fimbrialis*, Ecuador, DOGNIN, p. 130, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Parabæra* **n. g.** near *Abæra*, *P. nitidalis* **n. sp.**, Ecuador, DOGNIN, p. 125, t. c.
- Paralipsa stenopepla*, Queensland, TURNER, p. 156, P. Soc. Queensland xviii, **n. sp.**
- Passadena* and *Getulia*, synonymy, DYAR, p. 114, P. ent. Soc. Washington vi.
- Pectinigera ardifera* Hulst, synonymy, DYAR, p. 159, t. c.
- Peoria discostrigella*, Arizona, DYAR, p. 115, t. c. **n. sp.**
- Phlyctænia tiliialis*, British Columbia, DYAR, p. 916, P. U. S. Mus. xxvii; *P. lampadias*, Hawaiian islands, MEYRICK, p. 359, Fauna Hawaiensis iii : **n. spp.**
- Phlyctænodes darwinialis*, Anklam, SAUBER, p. 109, Verh. Ver. Hamburg Unterh. xii, **n. sp.**
- Phryganodes hypoxantha*, Ecuador, DOGNIN, p. 128, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Phycita corethropus*, p. 138, *adiacritis*, p. 140, *trachystola*, *mixoleuca*, p. 142, *recondita*, *atimeta*, p. 143, Australia, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Pionea arabescalis*, natural history, CHRÉTIEN, pp. 89–92, Naturaliste 1904.
- P. illineatalis*, *viridalis*, Ecuador, DOGNIN, p. 131, Ann. Soc. ent. Belgique xlvi, **n. spp.**
- Polygrammodes interpunctalis*, Peru, DOGNIN, p. 129, t. c. **n. sp.**
- Polyocha rhabdota*, *achrosta*, Queensland, TURNER, p. 122, P. Soc. Queensland xviii, **n. spp.**
- Poujadia callirhoda*, p. 120, *holochra*, p. 121, Australia, TURNER, t. c. **n. spp.**
- Psorosina* **n. g.** near *Psorosa*, *P. angulella* **n. sp.**, Iowa, DYAR, p. 113, P. ent. Soc. Washington vi.
- Pyla hanhamella*, *rainierella*, N. America, DYAR, p. 109, t. c.; *P. pallidella*, Utah, DYAR, p. 107, J. N. York Ent. Soc. xii : **n. spp.**
- Pyrallis costalis* var., THURNALL, p. 15, Ent. Mag. xl.
- Pyrausta machoeralis*, natural history, injuries to teak, HOLE, pp. 680–697, J. Bombay Soc. xv; *P. æralis*, Algerian var., CHRÉTIEN, p. 45, Naturaliste 1904.
- P. pyropsalis*, Bahamas, HAMPSON, p. 187, Ann. Nat. Hist. xiv, **n. sp.**

- Rhectosomia? longistrialis*, Ecuador, DOGNIN, p. 130, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Rhodoneura cypholoma*, Queensland, TURNER, p. 112, P. Soc. Queensland xviii, **n. sp.**
- Salebria triplagiella*, Manitoba, DYAR, p. 109, P. ent. Soc. Washington vi, **n. sp.**
- S. bakerella*, p. 105, *furciferella*, *vetustella*, p. 106, N. America, DYAR, J. N. York Ent. Soc. xii, **n. spp.**
- Salobrena phyrea*, Brazil, SCHAUS, p. 175, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Saluria rhodoessa*, Queensland, TURNER, p. 120, P. Soc. Queensland xviii, **n. sp.**
- Sanguesa dyopsata*, Mexico, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Sarata rhoiella*, Colorado, DYAR, p. 105, J. N. York Ent. Soc. xii, **n. sp.**
- Scenidiopis* **n. g.** for *Persicoptera chionozyga* Low., TURNER, p. 184, P. Soc. Queensland xviii.
- Scirpophaga holophæalis*, Bahamas, HAMPSON, p. 181, Ann. Nat. Hist. xiv, **n. sp.**
- Scoparia liebmanni*, Corsica, PETRY, p. 245, Stettin Ent. Zeit. lxxv; *S. torniplagalis*, Washington, DYAR, p. 105, J. N. York Ent. Soc. xii; *S. normalis*, p. 71, *fernaldalis*, *tricoloralis*, *cinereomedia*, p. 72, N. America, DYAR, Ent. News Philad. xv; *S. gymnopsis*, p. 131, *isophæa*, p. 132, Molokai, MEYRICK, Ent. Mag. xl; *S. gonodecta*, p. 362, *catactis*, p. 363, *religiosa*, p. 365, Hawaiian islds, MEYRICK, Fauna Hawaiiensis iii : **n. spp.**
- Selagia lithosella*=(*Honora luteella* Hulst), DYAR, p. 160, P. ent. Soc. Washington vi.
- Semnia mexicanalis*, Mexico, *S.? mirma*, Brazil, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Semniomima mediana*, Parana, SCHAUS, p. 178, t. c. **n. sp.**
- Siculodes triumphans*, Peru, WARREN, p. 1, Nov. Zool. xi; *S. figurata*, *lacteguttata*, Peru, WARREN, p. 493, t. c. **n. spp.**
- Sindris magnifica*, Angola, JORDAN, p. 447, Nov. Zool. xi, **n. sp.**
- Spatulipalpia sophronica*, Queensland, TURNER, p. 149, P. Soc. Queensland xviii, **n. sp.**
- Staudingeria olivucella*, *perluteella*, N. America, DYAR, p. 111, P. ent. Soc. Washington vi, **n. spp.**
- Stenia hieralis*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Stericta multicolor*, *nigrisquama*, S. America, DOGNIN, p. 124, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Sthenobela* **n. g.** near *Phycita*, p. 135, *S. niphostibes* **n. sp.**, Queensland, p. 136, TURNER, P. Soc. Queensland xviii.
- Striglina divisata*, Natuna Ids., WARREN, p. 484, Nov. Zool. xi, **n. sp.**
- Symphonistis* **n. g.** type *Nephopteryx monospila* Low., TURNER, p. 135, P. Soc. Queensland xviii.
- Tacoma*; characters and components, DYAR, p. 112, P. ent. Soc. Washington vi.
- T. nyssæcolella*, N. America, DYAR, p. 112, t. c. **n. sp.**
- Talis isodeta*, *xiphosema*, p. 175, *eucraspeda*, *orthotypa*, p. 176, *haplotypa*, p. 177, Australia, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Tetrastichus leucogramma*, Bahamas, HAMPSON, p. 183, Ann. Nat. Hist. xiv; *T. paula*, Brazil, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Titanceros poliochyta*, Queensland, TURNER, p. 191, P. Soc. Queensland xviii, **n. sp.**
- Tolima cincaidella*, Wyoming, DYAR, p. 115, P. ent. Soc. Washington vi, **n. sp.**
- Tosale grandis*, Mexico, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx; *T. pilata*, Ecuador, DOGNIN, p. 125, Ann. Soc. ent. Belgique xlviii : **n. spp.**

- Trissonea epiterpes*, p. 132, *capnoëssa*, p. 133, Australia, TURNER, P. Soc. Queensland xviii, **n. sp.**
Tylochares sceptucha, Queensland, TURNER, p. 130, t. c. **n. sp.**
Ubidia holomochla, Queensland, TURNER, p. 165, t. c. **n. sp.**
Ulophora brunneella, p. 106, *tephrosiella*, p. 107, N. America, DYAR, P. ent. Soc. Washington vi, **n. spp.**
Varneria n. g. p. 114, *V. postremella n. sp.*, Kentucky, p. 115, DYAR, t. c.
Vitula serratilineella, generic position, DYAR, p. 158, t. c.
Xanthomelaina quinquepuncta, Borneo, SWINHÖE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
Zeuzerodes subfulvata, Ecuador, WARREN, p. 1, Nov. Zool. xi, **n. sp.**
Zophodia orobanchella, Washington, DYAR, p. 111, P. ent. Soc. Washington vi; *Z. aureomaculella*, Texas, DYAR, p. 107, J. N. York Ent. Soc. xii : **n. spp.**

PTEROPHORIDÆ.

- Platyptilia ochrodactyla* var. *n. bosniaca*, REBEL, p. 323, Ann. Hofmus. Wien xix; *P. rhododactyla*, metamorphosis, MURTFELDT, p. 334, Canad. Ent. xxxvi.

TORTRICIDÆ.

- [Cf. DOGNIN (398), DYAR (430, 437), KEARFOTT (776, 777), PETRY (1039).]
 Instructions for collecting and preparing, KEARFOTT (778).
 Notes for popular use on the divisions of *Tortricidæ*, ROSTAGNO, Boll. Soc. zool. Ital. xii, pp. 70-76.
Acalla decosseana, pl. ii, figg. 10, 11, p. 41, FUCHS, Jahrb. nassau. Ver. lvii.
Acleris britannia, p. 138, *fragariana*, p. 140, British Columbia, KEARFOTT, Canad. Ent. xxxvi, **n. spp.**
Ancylis maritima, Rhode island, DYAR, p. 221, P. ent. Soc. Washington vi, **n. sp.**
Atteria purpurea, p. 132, *unciana*, *fumipennis*, p. 133, S. America, DOGNIN, Ann. Soc. ent. Belgique xlvi, **n. spp.**
Commophila fuscodorsana, British Columbia, KEARFOTT, p. 141, Canad. Ent. xxxvi, **n. sp.**
Conchylis altocorsicana, Corsica, PETRY, p. 248, Stettin Ent. Zeit. lxx, **n. sp.**
Cydia arctostaphylana, p. 109, *pseudotsugana*, p. 110, British Columbia, KEARFOTT, Canad. Ent. xxxvi, **n. spp.**
Enarmonia cockleana, British Columbia, KEARFOTT, p. 137, t. c. **n. sp.**
Gynandrosoma n. g. near *Pseudogalleria*, *G. punctidiscanum n. sp.*, N. America, DYAR, p. 60, P. ent. Soc. Washington vi.
Hastula hyperana, larval habits, CHAPMAN, p. lxx, P. ent. Soc. London 1904.
Olethreutes betulatana, food-plant, HAVERHORST, p. 97, Ent. Ber. Nederland i.
Opogona fumiceps, early stages, VAN DEVENTER, p. 83, pl. x, fig. 1, Tijdschr. Ent. xlv.
Setomorpha tineoides, early stages, VAN DEVENTER, p. 81, pl. ix, fig. 3, t. c.
Thiodia artemisiana var. *n. infimbriana*, DYAR, p. 927, P. U. S. Mus. xxvii.
Tortrix raptimacula, Ecuador, DOGNIN, p. 132, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Polychrosis viteana, distinctions, natural history, SLINGERLAND, Bull. Cornell exp. Stat. No. 223, illustrations.
Proteopteryx willingana, Assinaboia, KEARFOTT, p. 306, Canad. Ent. xxxvi; *P. columbia*, p. 112, with varr. *albidorsana*, p. 113, and *mediostriana*, p. 114, British Columbia, KEARFOTT, t. c. : **n. spp.**

TINEIDÆ, s. l.

[Cf. BUSCK (203–206), CHRÉTIEN (276), DOGNIN (398), FERNALD (497), FUCHS (572), FYLES (576), LOWER (888), MEYRICK (946), PETRY (1038–1040), REBEL (1122), REUTER (1158), SAUBER (1212), TURNER (1411), VAN DEVENTER (1428, 1429), WALSINGHAM (1469, 1470).]

Remarkable larval cases and habits, GREEN, p. 158, *Spolia Zeylan.* ii.

Annotated list of Finland *Tineidæ*, REUTER, *Acta Soc. Faun. Fenn.* xxvi, No. 1, pp. 4–66.

Notes for popular use on the classification of *Tineidæ*, ROSTAGNO, pp. 68–87, *Boll. Soc. zool. Ital.* xiii.

Achoria n. g. *A. inopina* n. sp., Sydney, MEYRICK, p. 405, *P. Linn. Soc. N. S. Wales* xxix.

Acompsia dimorpha, Pyrenees, PETRY, p. 4, *Deutsche ent. Zeitschr. Iris* xvii, n. sp.

Adela collicolella, Tangier, WALSINGHAM, p. 7, *Ent. Mag.* xl, n. sp.

Æoloscelis aulacosema, *euphædra*, p. 172, *petrosarca*, *hemicroca*, Australia, LOWER, *Tr. R. Soc. S. Austral.* xxviii, n. spp.

Allocota n. g., p. 419, *A. simulacrella* n. sp., Sydney, p. 420, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Allonomya n. n. for *Orchemia* Fernald, BUSCK, p. 745, *P. U. S. Mus.* xxvii.

Anacamptis linella, Basses Alpes, CHRÉTIEN, p. 151, *Naturaliste* 1904; *A. fragariella*, Washington, BUSCK, p. 760, *P. U. S. Mus.* xxvii : n. spp.

Anaptilora n. g. *A. isocosma*, p. 390, *cremias*, p. 391, n. spp., Queensland, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Anarsia trichodeta, p. 415, *molybdota*, *leucophora*, p. 417, *epiula*, p. 418, n. spp., Australia, MEYRICK, t. c.

Apotistatus n. g. near *Symmoca*, *A. leucostictus* n. sp., Algeria, WALSINGHAM, p. 271, *Ent. Mag.* xl.

Argyresthia prenjjella, pl. v, fig. 21, p. 347, REBEL, *Ann. Hofmus. Wien* xix.

Aristotelia sinistra, p. 287, *macrothecta*, *furtiva*, p. 288, *thetica*, *tetracosma*, p. 289, *antipala*, *pamphæa*, *epimetalla*, p. 290, Australia, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix; *A. natalella*, *harrisonella*, Brit. Columbia, BUSCK, p. 756, *P. U. S. Mus.* xxvii : n. spp.

Arotria n. g. *A. iophæa* n. sp., Queensland, MEYRICK, p. 387, *P. Linn. Soc. N. S. Wales* xxix.

Aulacomima n. g. *A. trinervis* n. sp., Sydney, MEYRICK, p. 395, t. c.

Batrachedra zonochra, p. 169, *stenosema*, *hypoleuca*, *B. ? lygropis*, Australia, p. 170, LOWER, *Tr. R. Soc. S. Austral.* xxviii, n. spp.

Borkhausenia amphixantha, Melbourne, *B. ? erythrocephala*, N. S. W., LOWER, p. 169, t. c. n. spp.

Brachodes Gn. = (*Atychia* Latr. nec Ochs.), WALSINGHAM, p. 7, *Ent. Mag.* xl.

Calicotis microgalopsis, Queensland, LOWER, p. 171, t. c. n. sp.

Cerostoma indecorella, characters, variation, WALSINGHAM, p. 319, *Ent. Mag.* xl.

Chaliniastis n. g., p. 301, *C. astrapæa* n. sp., Queensland, p. 302, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Choreutis balsamorhizella, p. 748, *piperella*, p. 749, Washington, BUSCK, *P. U. S. Mus.* xxvii, n. spp.

Clymene egerifasciella to *Trichoptera*, BANKS, p. 116, *Ent. News Philad.* xv.

Coleophora tiliaefoliella Clem., description, KEARFOTT, p. 324, *Canad. Ent.* xxxvi; *C. limosipennella*, natural history, HOOVER, pp. 54–56, *Ent. News Philad.* xv; *C.*, cases, habits, TURNER, pp. xxxiv–xxxvi, *P. ent. Soc. London* 1904; *C.*, cases, TURNER, pp. xlix, l, t. c., and t. c. pp. lx–lxiii; *C.*, notes on, eggs etc., TURNER, pp. 32–34, *Ent. Rec.* xvi.

C. benedictella, Basses Alpes, CHRÉTIEN, p. 163, *Naturaliste* 1904; *C. persimilis*, Prenj, REBEL, p. 365, *Ann. Hofmus. Wien* xix; *C. neviusiella*, China, BUSCK, p. 45, *J. N. York ent. Soc.* xii : n. spp.

- Colobodes* **n. g.** *C. insomnis* **n. sp.**, Sydney, MEYRICK, p. 297, P. Linn. Soc. N. S. Wales xxix.
- Coptodisca arbutiella*, Washington, BUSCK, p. 769, P. U. S. Mus. xxvii, **n. sp.**
- Coptotelia nigriplaga*, Ecuador, DOGNIN, p. 134, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Cosmopteryx vellella*, Washington, BUSCK, p. 768, P. U. S. Mus. xxvii, **n. sp.**
- Craspedotis* **n. g.** *C. soloeca*, p. 326, *pragmatica*, *thinodes* **n. spp.**, Australia, p. 327, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Crocantes diula*, p. 398, *halurga*, p. 399, *glycina*, p. 400, *perigrapta*, p. 402, *zonias*, p. 403, Australia and Tasmania, MEYRICK, t. c. **n. spp.**
- Crasopola* **n. g.** for *Atasthalistis euchroa* Low., MEYRICK, p. 410, t. c.
- Cryptolechia seamaculata*, Ecuador, DOGNIN, p. 133, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Cryptophasa alphetodes*, *themerodes*, Queensland, TURNER, p. 244, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Cymatomorpha* **n. g.**, p. 411, *C. euplecta* **n. sp.**, Australia, p. 412, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Dectobathra* **n. g.**, p. 299, *D. choristis*, *amethystina*, p. 300, *insignis*, p. 301, **n. spp.**, Australia, MEYRICK, t. c.
- Depressaria heracleana*, food-plant, HAVERHORST, p. 97, Ent. Ber. Nederland. i.
- D. pentheri*, Prenj, REBEL, p. 360, pl. v, fig. 26, Ann. Hofmus. Wien xix ; *D. rosaciliella*, p. 763, *canella*, p. 764, *pallidella*, *alienella*, p. 765, N. America, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Deuteroptila* **n. g.**, p. 418, *D. sphenophora* **n. sp.**, Queensland, p. 419, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Dorata lineata* Wals. (as *Pterolonche*)=(*virgatella* Busck), DYAR, p. 178, J. N. York Ent. Soc. xii.
- Dorata* **n. g.** ? near *Chimabache*, *D. virgatella*, p. 123, *inornatella*, p. 124, **n. spp.**, Arizona, BUSCK, P. ent. Soc. Washington vi.
- Doryphora palustrella*, larva, BARRETT, p. 278, Ent. Mag. xl.
- Dysmasia petrinella*, habits, CHRÉTIEN, p. 119, Bull. Soc. ent. France 1904.
- Ephelictis* **n. g.**, p. 387, *E. megalarthra*, *neochalca*, p. 368, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Epibrontis* **n. g.** for *Gelechia hemichlæna* Low., MEYRICK, p. 324, t. c.
- Epidoca albidella* Reb. to *Symmoca*, WALSINGHAM, p. 272, Ent. Mag. xl.
- Epimastis* **n. g.** for *Gelechia porphyroloma* Low., MEYRICK, p. 325, P. Linn. Soc. N. S. Wales xxix.
- Epiphthora megalornis*, *balonodes*, p. 261, *drosias*, *thyellias*, *lemurella*, p. 262, *niphaula*, *psychrodes*, *miarodes*, p. 263, *isonira*, *autoleuca*, p. 264, *cryolopha*, *leucomichla*, p. 265, *phantusta*, *achnius*, *spectrella*, p. 266, *coniombra*, *microtima harpastis*, p. 267, Australia and Tasmania, MEYRICK, t. c. **n. spp.**
- Epithectis delminiella*, Balkans, REBEL, p. 353, Ann. Hofmus. Wien xix, **n. sp.**
- Eremica* **n. g.** near *Symmoca*, *E. saharae*, p. 270, *lithochroma* **n. spp.**, Algeria, p. 271, WALSINGHAM, Ent. Mag. xl.
- Eriocrania chrysolepidella*, p. 42, *sangii*, *kaltenbachii*, p. 43, notes, FUCHS, Jahrb. nassau. Ver. lvii.
- E. argyrolepidella*, Bornich, id. p. 43, t. c. **n. sp.**
- Ethmia zelleriella*, larva, DYAR, p. 3, P. ent. Soc. Washington vi ; *E. longimaculella*, larva, DYAR, p. 178, J. N. York Ent. Soc. xii.
- E. caliginosella*, Colorado, BUSCK, p. 44, t. c. **n. sp.**
- Eucalantica* **n. g.** for *Calantica polita* Walsingh., BUSCK, p. 750, P. U. S. Mus. xxvii.
- Eumasia* **n. g.** for *Dysmasia parietariella*, CHRÉTIEN, p. 119, Bull. Soc. ent. France 1904.
- Gelechia pyrenaica*, Pic du Midi, PETRY, p. 3, Deutsche ent. Zeitschr. Iris

- xvii; *G. montivaga*, p. 221, *lacertella*, p. 222, *sinuatella*, p. 223, *erubescens*, p. 265, *cerostomatella*, *nigrorosea*, p. 266, *heligmatodes*, p. 267, Algeria, WALSINGHAM, Ent. Mag. xl; *G. limitanella*, p. 349, pl. v, fig. 22, *G. (Lita) lakatensis*, p. 351, fig. 24, Bosnia, REBEL, Ann. Hofmus. Wien xix; *G. nephelombra*, p. 309, *bathropis*, p. 310, *epactæa*, p. 312, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix; *G. mandella*, *monella*, p. 759, *ceanothiella*, p. 760, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Glyphidocera septentrionella*, Brit. Columbia, BUSCK, p. 762, t. c. **n. sp.**
- Gnorinoschema bucolica*, p. 317, *petrinodes*, *pyrrhauthes*, p. 318, *marina*, p. 319, *xerophylla*, p. 320, *eschatopis*, p. 321, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix; *G. washingtoniella*, p. 757, *radiatella*, *splendoriferella*, p. 758, Washington, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Gracilaria elongella* varr., BUSCK, p. 770, t. c.
- G. cramerella*, Java, SNELLEN, p. 84, early stages, VAN DEVENTER, l. c. pl. 10, fig. 2, Tijdschr. Ent. xlvii; *G. eugeniella*, p. 11, pl. i, fig. 4, *barringtoniella*, p. 14, fig. 5, *diffuella*, p. 17, fig. 6, *glutella*, p. 20, fig. 7, *soyella*, p. 22, pl. ii, fig. 1, *protiella*, p. 25, fig. 2, *grisella*, p. 27, pl. ii, fig. 3, Java, VAN DEVENTER, Tijdschr. Ent. xlvii; *G. murtfeldtella*, N. America, BUSCK, p. 771, P. U. S. Mus. xxvii : **n. spp.**
- Heliozela præustella*, pl. i, fig. 3, p. 7, *sobrinella*, p. 9, Java, VAN DEVENTER, Tijdschr. Ent. xlvii, **n. spp.**
- Hemerophila* BUSCK, **n. spp.**, see *Geometridæ*.
- Hemiarcha* **n. g.** type *Gelechia thermochroa*, MEYRICK, p. 331, P. Linn. Soc. N. S. Wales xxix.
- Holcoecera glandulella*, metamorphosis, CHITTENDEN, p. 38, Bull. U. S. Dep. Agric. Ent. xlv.
- Hyodectis* **n. g.** *H. crenoides* **n. sp.**, Australia, MEYRICK, p. 411, P. Linn. Soc. N. S. Wales xxix.
- Idiophantis* **n. g.** *I. habrias* **n. sp.**, Brisbane, MEYRICK, p. 298, t. c.
- Incurvaria piperella*, Washington, BUSCK, p. 775, P. U. S. Mus. xxvii, **n. sp.**
- Iulota* **n. g.** near *Aristotelia*, *I. ithyxylla*, Australia, p. 283, *triglossa*, Tasmania, p. 284, **n. spp.**, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Kearfottia* **n. g.** *Choreutinae*, p. 130, *K. albifusciella* **n. sp.**, N. America, p. 131, FERNALD, Canad. Ent. xxxvi.
- Leucoptera pachystimella*, Brit. Columbia, BUSCK, p. 774, P. U. S. Mus. xxvii, **n. sp.**
- Leobatus* **n. g.** near *Gelechia*, p. 220, *L. fagoniæ* **n. sp.**, Algeria, p. 221, WALSINGHAM, Ent. Mag. xl.
- Leptogeneia* **n. g.**, p. 412, *L. bicristata* **n. sp.**, Sydney, p. 413, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Lichenaula callispora*, Australia, TURNER, p. 245, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Limnoecia heterozona*, *isodesma*, *anisodesma*, Australia, LOWER, p. 174, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Lita nitentella*, natural history, PETRY, pp. 176–179, Stettin Ent. Zeit. lxy.
- L. oreocyrniella*, Corsica, PETRY, p. 249, t. c. **n. sp.**
- Lithocolletis suaveolentis*, Corsica, PETRY, p. 252, t. c. **n. sp.**
- Litodonta hydromeli*, larva, DYAR, p. 3, P. ent. Soc. Washington vi.
- Lyonetia simplella*, Java, SNELLEN, p. 86, early stages, VAN DEVENTER, l. c. pl. x, fig. 3, Tijdschr. Ent. xlvii; *L. saliciella*, Brit. Columbia, BUSCK, p. 773, P. U. S. Mus. xxvii : **n. spp.**
- Macrenches* **n. g.**, p. 306, *M. eurybatis* **n. sp.**, W. Australia, p. 307, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Macrotona* **n. g.**, p. 405, *M. terrigena*, p. 406, *cyamitis*, *sobria*, p. 407, **n. spp.**, Australia, MEYRICK, t. c.
- Marmara arbutiella*, Washington, BUSCK, p. 772, P. U. S. Mus. xxvii, **n. sp.**

- Megacraspedus platyleuca*, p. 274, *astempbella*, *centrosema*, p. 275, *oxyphanes*, *chalcoscia*, *melitopis*, p. 276, *euxena*, *hoplitis*, *inficeta*, p. 277, *pityritis*, p. 278, *sclerotricha*, p. 279, *aphileta*, *isotis*, p. 280, *coniodes*, p. 281, *ischnota*, *popularis*, p. 282, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Metzneria incognita*, Algeria, WALSINGHAM, p. 220, Ent. Mag. xl, **n. sp.**
- Nemotois constantinella*=(*demaïsoni* Rgt.), WALSINGHAM, p. 217, Ent. Mag. xl.
- Nepticula bleonella*, Basses Alpes, CHRÉTIEN, p. 164, Naturaliste 1904; *N. thuringiaca*, Germany, PETRY, p. 179, Stettin Ent. Zeit. lxxv; *N. tingitella*, Tangier, WALSINGHAM, p. 8, Ent. Mag. xl : **n. spp.**
- Nothris sulcella*, Prenj, REBEL, p. 356, pl. x, fig. 25, Ann. Hofmus. Wien xix; *N. chloristis*, p. 421, *centrothetis*, p. 422, *crocina*, p. 423, *mylicotis*, p. 426, *tephrastis*, *dentata*, p. 427, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Ocystola heliotricha*, Tasmania, LOWER, p. 168, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Onebala* to be compared with *Trichotaphe*, *O. lamprostoma* Z.=(*zulu* Wals.), WALSINGHAM, p. 267, Ent. Mag. xl.
- Ornix sauberiella* (Sorh.), Hamburg, SAUBER, p. 46, Verh. Ver. Hamburg. Unterh. xii, **n. sp.**
- Orthoptila n. g.* for *Æcophora abruptella* Walk., MEYRICK, p. 392, P. Linn. Soc. N. S. Wales xxix.
- Paltodora stalactis*, p. 271, *sciopola*, *actias*, p. 272, Australia and Tasmania, MEYRICK, t. c. **n. spp.**
- Pancoenia n. g.* *P. periphora*, p. 389, *pelota*, p. 390, **n. spp.**, Sydney, MEYRICK, t. c.
- Paraclemensia n. n.* for *Brackenridgia* Busck 1903, BUSCK, p. 177, J. N. York Ent. Soc. xii.
- Phlæograptis n. g.*, p. 393, *P. macrynta*, *brachynta*, *zopherota*, p. 394, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Phlæopola sciaspila*, Queensland, LOWER, p. 168, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Phyllocnistis minimella*, p. 34, pl. ii, fig. 6, *humiliella*, p. 38, fig. 7, *exiguella*, p. 40, fig. 8, Java, VAN DEVENTER, Tijdschr. Ent. xlvii; *P. minutella*, Java, SNELLEN, p. 87, early stages, VAN DEVENTER, l. c. pl. x, fig. 4, op. cit. xlvii : **n. spp.**
- Plutella notabilis*, Washington, p. 752, *poulella*, Brit. Columbia, p. 753, BUSCK, P. U. S. Mus. xxvii, **n. spp.**
- Proactica n. g.* near *Anaphaula*, p. 268, *P. halimilignella n. sp.*, Algeria, p. 269, WALSINGHAM, Ent. Mag. xl.
- Procometis aplegiopa*, Queensland, TURNER, p. 245, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Prodosiarcha n. g.* *P. loxodesma n. sp.*, Australia, MEYRICK, p. 330, P. Linn. Soc. N. S. Wales xxix.
- Prototechia n. g.*, p. 332 for 85 species Australian *Gelechiidæ*, most of them new, viz., *tetraploa*, *telopis*, p. 338, *exarista*, p. 339, *acroleuca*, *camionopis*, p. 340, *temenitis*, *voluta*, p. 341, *pacifica*, p. 342, *trachyphanes*, *prisca*, p. 343, *diplonesa*, *crysibatis*, p. 344, *flexilis*, *frugalis*, p. 345, *microdora*, *invalida*, *cladara*, p. 346, *sciodes*, *trichosema*, p. 347, *aclera*, *autopis*, p. 348, *elpistis*, p. 349, *argocentra*, *liota*, p. 350, *hypoleuca*, *cosmotis*, p. 351, *psephias*, *actinota*, p. 352, *nyctias*, *iochlaema*, p. 353, *xestolitha*, *nephelota*, p. 354, *anthracina*, *phlæodes*, *thyridota*, p. 355, *sarisias*, p. 356, *englypta*, p. 357, *obeliscota*, p. 358, *sisyræa*, *chenias*, p. 359, *mechanistis*, p. 360, *xuthias*, p. 361, *ceramica*, p. 362, *hormodes*, *plinthactis*, p. 363, *stratifera*, *catarrhacta*, p. 366, *tabulata*, *pelogramma*, p. 367, *amblopis*, p. 368, *æolopis*, *hylas*, p. 369, *compsocroa*, p. 370, *odorifera*, *micropa*, p. 371, *diplanetis*, *cephalota*, p. 373, *scytina*, *ananeura*, p. 374, *xanthocephala*, p. 376, *trichalina*, *arganthes*, p. 377,

- selenia*, p. 378, *gorgonias*, *chiradia*, p. 380, *thyrsoptera*, p. 381, *phasianis*, p. 382, *loemias*, p. 383, *megalommata*, *banausodes*, p. 384, *crotalodes*, *molyntis*, p. 385, *aspetodes*, p. 386, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Pyroderces albinaculella*, p. 30, pl. ii, fig. 4, *albilineella*, p. 33, fig. 5, Java, VAN DEVENTER, Tijdschr. Ent. xlv; *P. argyrozona*, Queensland, LOWER, p. 173, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Rhinosisa pullidipulchra*, Algeria, WALSINGHAM, p. 269, Ent. Mag. xl, **n. sp.**
- Sarisophora* **n. g.**, p. 403, *S. leptoglypta*, *chlænota* **n. spp.**, Australia, p. 404, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Sarotoma* **n. g.**, p. 322, *S. eridora* **n. sp.**, Australia, p. 323, MEYRICK, t. c.
- Scardia burkerella*, Washington, BUSCK, p. 777, P. U. S. Mus. xxvii, **n. sp.**
- Scythris magnatella*, Brit. Columbia, BUSCK, p. 768, t. c. **n. sp.**
- Smenodoca* **n. g.**, p. 302, *S. erebenna* **n. sp.**, Australia, p. 303, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Spatularia* **n. g.** near *Tinea*, *S. fuligineella* **n. sp.**, Java, with early stages, VAN DEVENTER, p. 1, pl. i, fig. 1, Tijdschr. Ent. xlvii.
- Sphaleractis* **n. g.** *S. parasticta*, p. 328, *eurysema*, p. 329, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Stigmatophora fiordalisa*, Corsica, PETRY, p. 250, Stettin Ent. Zeit. lxxv, **n. sp.**
- Stathmopoda trichopeda*, *holobapta*, Australia, LOWER, p. 171, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Stegasta* **n. g.**, p. 313, *S. variana*, *allactis*, p. 314, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Symbolistis* **n. g.**, p. 413, *S. orophota*, *argyromitra* **n. spp.**, Australia, p. 414, MEYRICK, t. c.
- Symmoca sericiella*, Algeria, WALSINGHAM, p. 273, Ent. Mag. xl, **n. sp.**
- Styloceros* **n. g.** *S. trigonias*, p. 408, *lychnocentra*, *cyclonitis*, p. 409, **n. spp.**, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Syntomactis decalopha*, *argoscia*, p. 175, *gnophodes*, *perinephes*, *polychroa*, p. 176, *melamydra*, p. 177, Australia, LOWER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Thalamarchis* **n. g.** for *Cryptotechia alveola* Feld., MEYRICK, p. 436, P. Linn. Soc. N. S. Wales xxix.
- Thiotricha* **n. g.**, p. 292, type *thorybodes* Meyr., with *T. chrysopa*, *oxytheces*, p. 293, *margarodes*, *leucothona*, p. 294, *paraconta*, *arthrodes*, p. 295, *bullata*, *niphastis*, *anticentra*, p. 296, *parthenica*, p. 297, **n. spp.**, Australia and Tasmania, MEYRICK, t. c.
- Tinea leucocapitella*, Washington, BUSCK, p. 776, P. U. S. Mus. xxvii, **n. sp.**
- Trachydora leucobathra*, p. 177, *polyzona*, *zophopepla*, p. 178, *molybdimera*, *anthrascopa*, *centromela*, p. 179, *microleuca*, *argoneura*, p. 180, Australia, LOWER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Trichotaphe levisella*, Quebec, FYLES, p. 211, Canad. Ent. xxxvi; *T. simplicella*, p. 761, *leuconotella*, p. 762, Washington, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Tritadelpha* **n. g.** *T. microptila* **n. sp.**, Brisbane, p. 323, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Xylorycta cirrhodes*, Queensland, TURNER, p. 244, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Xystophora modicella*, Java, with early stage, VAN DEVENTER, p. 4, pl. i, fig. 2, Tijdschr. Ent. xlvii, **n. sp.**
- Yponomeuta*; synonymy, GUIGNON, pp. 219, 220, Feuille Natural. xxxiv : LOISELLE, t. c. p. 235.
- Ipsolophus ammxanthus*, *zygophorus*, p. 430, *peristylis*, p. 431, *achlyodes*, *iodorus*, p. 432, *plasticus*, p. 433, *capnites*, p. 435, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Zelleria gracilariella*, p. 753, *ribesella*, p. 754, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii, **n. spp.**

(D.) DIPTERA.

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 The mouth-parts of *Diptera*, WIMMER, Rozp. Ceske Ak. Praze ii, xiii, No. 1, pp. 4-10, pl. 2.
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Diptera of Alaska, COQUILLETT (320).
 Brief note on *Diptera* of Rome, TUCCIMEI, pp. 218-222, Boll. Soc. zool. Ital. xi-xiii.
 Study of the reduced head, *Chironomus*, *Phalacroceras*, *Microdon*, *Musca*, HOLMGREN, pp. 343-355, cuts, Zool. Anz. xxvii.
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 List of types of *Diptera* in the American Museum Natural History, BEUTENMÜLLER (121).

CECIDOMYIIDÆ.

- [Cf. BEZZI (128), COCKERELL (287), COLLIN (298), KIEFFER (792), MARCHAL (906, 910, 911), MEUNIER (942), SLINGERLAND & JOHNSON (1309), TROTTER (1396), WEBSTER (1499).]
 Cecid. gall on *Arthrocnemum*, Marocco, TROTTER, p. 14, cut, Marcellia iii.
Cecidomyiidae in amber, n. spp. cf. Palæoentomology, p. 124.
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Clinodiplosis dahliæ, Vallombrosa, KIEFFER, p. 92, Marcellia iii, n. sp.
Diplosis resinicola, parasites, ECKEL, p. 325, Biol. Bull. vi.
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Rhabdophaga porterae, New Mexico, COCKERELL, p. 155, Canad. Ent. xxxvi, n. sp.
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MYCETOPHILIDÆ.

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Mycetophilidae and *Sciaridae* in amber, relations of divisions of *Mycetophilidae*, MEUNIER (942) and Palæoentomology, p. 124.

- Mycetophilid* cocoons, GREEN, p. 158, *Spolia Zeylan.* ii.
Acnemia varipennis, California, COQUILLETT, p. 169, P. ent. Soc. Washington vi, **n. sp.**
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Platyura pullata, California, COQUILLETT, p. 171, t. c. **n. sp.**
Sciara trifasciata, Nicaragua, COQUILLETT, p. 90, t. c. **n. sp.**

CHIRONOMIDÆ.

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Ceratopogon medius, New Jersey, COQUILLETT, p. 166, P. ent. Soc. Washington vi; *C. terminalis*, Nicaragua, COQUILLETT, p. 90, t. c.; *C. guttatus*, Brazil, COQUILLETT, p. 35, J. N. York Ent. Soc. xii: **n. spp.**
Chironomus, anatomy of larva, head, HOLMGREN (699); *C. plumosus*, great dancing swarms, SCHUSTER, p. 344, Zool. Garten xlv.
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CULICIDÆ.

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- Psorophora ciliata*, larval habits, DYAR, p. 244, J. N. York Ent. Soc. xii.
- Runchomyia philippinensis*, Philippines, GILES, p. 368, J. trop. Medicine vii, **n. sp.**
- Sayomyia rotundifolia*, p. 366, *hudsoni*, p. 371, New York, FELT, Bull. N. York Mus. No. 79, **n. spp.**
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- T. cristatus*, Nile, THEOBALD, p. 78, t. c. ; *T. whitmorei*, Philippines, GILES, p. 367, J. trop. Medicine vii ; *T. nigricans*, Panama, p. 166, *signipennis*, Mexico, p. 167, COQUILLETT, P. ent. Soc. Washington vi ; *T. niger*, *antiquæ*, Antigua, GILES, p. 384, J. trop. Medicine vii : **n. spp.**
- Theobaldia spathipalpis*, pl. vi, fig. 1, p. 73, THEOBALD, 1st Rep. Wellcome Lab.

- Toxorhynchites leicesteri*, THEOBALD, p. 36, *metallicus*, LEICESTER, p. 37, Malay States, Entomologist 1904, **n. spp.**
Uranotenidia balfouri, Nile, pl. vi, fig. 6, p. 82, THEOBALD, 1st Rep. Wellcome Lab.; *U. nitidoventer*, Philippines, GILES, p. 368, J. trop. Medicine vii: **n. spp.**

PSYCHODIDÆ.

[Cf. EATON (445), WAHLGREN (1463).]

- Clytocybus* **n. g.** for part of *Pericoma*, EATON, p. 59, Ent. Mag. xl.
Logima **n. g.** Type *Psychoda erminea* Eat., EATON, p. 58, t. c.
Pericoma albomaculata, Småland, WAHLGREN, p. 16, Arkiv Zool. ii, No. 7, **n. sp.**
Philosepedon **n. g.** for *P. humeralis* Meig., EATON, p. 57, Ent. Mag. xl.
Phlebotomus and allies, characters, EATON, pp. 55, 56, t. c.
Telmatoscopus **n. g.** for part of *Pericoma*, EATON, p. 58, t. c.
Threticus **n. g.** *T. gemina*, England, *compar*, Britain, Algeria, Madeira, **n. spp.**, EATON, p. 57, t. c.
Xenapates **n. g.** for part of *Pericoma*, EATON, l. c.

TIPULIDÆ and RHYPHIDÆ.

[Cf. DE MEIJERE (934), SNODGRASS (1323), WAHLGREN (1463).]

- Revision of Zetterstedt's types of Scandinavian *Tipulidæ*, WAHLGREN, pp. 1-13, Arkiv Zool. ii, No. 7.
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Eriocera nigripennis, Java, MEIJERE, p. 92, Bijdr. Dierk. xviii, **n. sp.**
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Pachyrhina dorsalis, p. 89, *fallax*, *scurroides*, Java, *dimidiata*, New Guinea, p. 90, pl. viii, fig. 4, MEIJERE, t. c. **n. spp.**
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SIMULIIDÆ.

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S. notatum, Arizona, ADAMS, p. 434, Kansas Univ. Sci. Bull. ii, **n. sp.**

BIBIONIDÆ.

[Cf. COQUILLETT (313, 315), DE MEIJERE (934).]

- Bibio obscuripennis*, Darjiling, MEIJERE, p. 87, Bijdr. Dierk. xviii, **n. sp.**
Bibiodes **n. g.** *B. halteralis* **n. sp.**, California, COQUILLETT, p. 171, P. ent. Soc. Washington vi.
Dilophus fumosus, *rhynchops*, Nicaragua, COQUILLETT, p. 91, t. c. **n. spp.**
Plecia lugubris, Ta-tsienslu, MEIJERE, p. 86, Bijdr. Dierk. xviii, **n. sp.**

STRATIOMYIIDÆ and SCENOPINIDÆ.

[Cf. ADAMS (8), COQUILLETT (318), HINE (688), DE MEIJERE (934), MELANDER (936).]

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Eudmeta brunnea, Darjiling, MEIJERE, p. 94, pl. viii, fig. 19, Bijdr. Dierk. xviii, n. sp.

Euparyphus obliquus, British Columbia, HINE, p. 87, Canad. Ent. xxxvi, n. sp.

Hermelia fenestrata, Palembang, pl. viii, fig. 9, *læta*, Bengal, p. 93, MEIJERE, Bijdr. Dierk. xviii, n. spp.

Macrosargus texanus, N. America, MELANDER, p. 19, Canad. Ent. xxxvi, n. sp.

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Scenopinus mirabilis electa, Arizona, ADAMS, p. 445, Kansas Univ. Sci. Bull. ii, n. spp.

TABANIDÆ.

[Cf. ADAMS (8), BRUMPT (136), HINE (689, 691), JOHNSON (765), RICARDO (1172), VILLENEUVE (1459), WHITNEY (1525).]

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Udenocera n. g. *Tabaninæ*, p. 354, for *U. brunneus* n. sp., Ceylon, p. 355, RICARDO, Ann. Nat. Hist. xiv.

LEPTIDÆ, incl. XYLOPHAGIDÆ.

[Cf. ADAMS (8), COQUILLET (315), DE MEIJERE (934), VILLENEUVE (1459).]

Chrysopila simplex, Java, MEIJERE, p. 97, Bijdr. Dierk. xviii; *C. lucifera*, p. 437, *bella*, *flavibarbis*, p. 438, North America, ADAMS, Kansas Univ. Sci. Bull. ii : **n. spp.**

Leptis pluralis, p. 441, *palpalis*, p. 442, Washington, ADAMS, t. c. **n. spp.**

Symphoromyia flavipalpes, Colorado, ADAMS, p. 439, t. c.; *S. securifera*, California, COQUILLET, p. 171, P. ent. Soc. Washington vi : **n. spp.**

Xylophagus nitidus, New Hampshire, ADAMS, p. 435, Kansas Univ. Sci. Bull. ii, **n. sp.**

THEREVIDÆ.

[Cf. ADAMS (8), COQUILLET (313, 315), VILLENEUVE (1459).]

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ASILIDÆ, MYDASIDÆ.

[Cf. ADAMS (8), BACK (73), BRÈTHES (175), COQUILLET (315, 318), VILLENEUVE (1459).]

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Erax tuberculata, S. Texas, COQUILLET, p. 34, J. N. York Ent. Soc. xii, **n. sp.**

Holopogon latus, S. Texas, COQUILLET, p. 33, t. c. **n. sp.**

Laphystia flavipes, *limatula*, *opaca*, N. America, COQUILLET, p. 180, P. ent. Soc. Washington vi, **n. spp.**

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Metapogon **n. g.** near *Cyrtopogon*, p. 181, *M. gilvipes*, *punctipennis* **n. spp.**, N. America, p. 182, COQUILLET, P. ent. Soc. Washington vi.

Mydas abdominalis, Arizona, ADAMS, p. 434, Kansas Univ. Sci. Bull. ii, **n. sp.**

- Myolestes* n. g. near *Allopogon*, p. 338, *A. lynckii* n. sp., Tucuman, p. 339, BRËTHES, An. Mus. Buenos Aires xi.
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BOMBYLIIDÆ.

- [Cf. COQUILLET (315, 318), HINE (688), KÜNCKEL (847), VILLENEUVE (1459).]
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Phthiria unimaculata, S. Texas, COQUILLET, p. 32, J. N. York Ent. Soc. xii; *P. melanoscuta*, Arizona, *fulvida*, Mexico, p. 172, *marginata*, *vittiventris*, *nubeculosa*, p. 173, *inornata*, *badia*, p. 174, *picturata*, *flaveola*, *amplicella*, p. 175, *bicolor*, p. 176, N. America, COQUILLET, P. ent. Soc. Washington vi : n. spp.
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EMPIDÆ.

- [Cf. BEZZI (124, 125).]
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Elaphropeza spuria, New Guinea, p. 347, *metatarsata*, Ceylon, p. 348, *bicolor*, Paramatta, *basalis*, Ceylon, p. 349, BEZZI, t. c. n. spp.
Empis hilaræformis, p. 340, *cyanescens*, p. 342, N. S. Wales, *ceylonica*, Pattipola, p. 343, *papuana*, New Guinea, p. 344, BEZZI, t. c. n. spp.

- Halsanalotes setifrons*, N. S. Wales, BEZZI, p. 357, t. c. **n. sp.**
Hilara huttoni n. n. for *fulvipes* Hutt., BEZZI, p. 360, t. c.
Hybos bisetosus, E. India, p. 324, *pollinosus*, p. 326, *brachystigma*, p. 327, Australia, BEZZI, t. c. **n. spp.**
Leptopeza pulcherrima, p. 336, *bimaculata*, p. 337, *tachydromiæformis*, p. 338, Australia, BEZZI, t. c. **n. spp.**
Ptilophyllodromia **n. g.** *Hemerodromini*, p. 344, *P. biroi* **n. sp.**, New Guinea, p. 345, BEZZI, t. c.
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DOLICHOPIDÆ.

[Cf. ALDRICH (21), COQUILLET (315), JOHNSON (765), OLDENBERG (993), ROUBAUD (1200), SNODGRASS (1324), VERRALL (1438).]

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PLATYPEZIDÆ.

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SYRPHIDÆ.

[Cf. ADAMS (8), BRÈTHES (329), DE MEIJERE (934, 935), VERRALL (1439), WILLIS & BURKILL (1533).]

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CONOPIDÆ.

[Cf. COQUILLETT (313), DE MEIJERE (933, 934).]

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DIPTERA, PUPIPARA (incl. STREBLIDÆ).

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APHANIPTERA, (or SIPHONAPTERA).

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- Ceratophyllus italicus*, Italy, on rats, TIRABOSCHI, p. 266, cuts, Arch. parasit. viii; *C. henleyi*, Egypt, ROTHSCHILD, p. 3, Entomologist 1904; *C. hilli*, Sydney, p. 622, pl. xi, figg. 43, 44, *woodwardi*, W. Australia, p. 623, pl. x, fig. 41, and xi, fig. 42, *thomasi*, Australia, p. 625, pl. xi, figg. 45, 48, *zethi*, Gippsland, p. 626, pl. xi, fig. 50, and xii, fig. 52, *ochi*, Victoria, p. 628, pl. xi, fig. 49, and xii, fig. 54, *novæguineæ*, New Guinea, p. 629, pl. xiii, figg. 66, 67, *ahalcæ*, p. 631, pl. xi, fig. 51, xii, fig. 55, and xiii, fig. 60, *alladinis*, p. 632, pl. xii, fig. 53, India, *endymionis*, Chile, p. 634, pl. xiv, fig. 70, *agrippinæ*, p. 634, pl. xii, figg. 56, 57, and xiii, figg. 62, 64, *dorippæ*, p. 636, *numæ*, p. 637, pl. xii, fig. 58, and xiii, figg. 59, 63, 65, *octavii*, p. 638, pl. xiii, fig. 61, Cape Colony, ROTHSCHILD, Nov. Zool. xi; *C. dentatus*, Idaho, on *Lynx*, p. 390, *perpinnatus*, Queen Charlotte islds., p. 391, *tuberculatus*, Idaho, on *Citellus*, p. 393, *alaskensis*, Alaska, on *Citellus*, p. 394, *californicus*, California, p. 395, *oculatus*, Washington, p. 396, *ciliatus*, California, p. 397, *pseudarctomys*, New York, p. 399, *leucopus*, New York, on *Peromys*, p. 401, *labiatus*, Idaho, on *Lynx*, p. 402, *sexdentatus*, California on *Neotoma*, p. 403, *wagneri*, Idaho, on *Peromyscus*, p. 405, *asio*, Massachusetts, on *Megascops*, p. 406, *canadensis*, Ottawa, p. 407, *vison*, New York, on *Putorius*, p. 408, *lucidus*, Colorado, p. 410, *arctomys*, New York, p. 411, *proximus*, California, p. 412, *idahoensis*, Idaho, p. 413, *petiolatus*, Idaho, on *Lynx*, *eremicus*, Arizona, on *Peromyscus*, *stylosus*, Oregon, on *Aplodontia*, BAKER, P. U. S. Mus. xxvii : **n. spp.**
- Ceratopsylla palposus*, Brit. Columbia, p. 652, ROTHSCHILD, Nov. Zool. xi; *C. wolffsohni*, Paraguay, ROTHSCHILD, p. 147, Revist. chilena viii : **n. spp.**
- Chætopsylla mikado*, Japan, ROTHSCHILD, p. 645, pl. xiv, fig. 76, Nov. Zool. xi, **n. sp.**
- Ctenocephalus serraticeps* var. *murina*, TIRABOSCHI, p. 259, cut p. 260, Arch. parasit. viii.
- Ctenophthalmus pseudagyrtes*, characters, p. 641, pl. xiv, figg. 73, 78, and xv, fig. 81, ROTHSCHILD, Nov. Zool. xi.

- C. pseudagyrtes*, p. 421, *yenalis*, p. 424, N. America, BAKER, P. U. S. Mus. xxvii; *C. wenmanni*, British Columbia, p. 642, pl. xiv, figg. 75, 77, 79, *antiquorum*, Brazil, p. 643, pl. xiv, fig. 72, and xv, figg. 80, 82, ROTHSCHILD, Nov. Zool. xi : **n. spp.**
- Ctenopsyllus granti*, British Columbia, p. 646, pl. xv, figg. 84, 87, and xvii, fig. 91, *aganippes*, Cape Colony, p. 647, pl. xv, fig. 83, and xvi, fig. 90, *brooksi*, British Columbia, p. 649, pl. xv, figg. 86, 88, and xvi, fig. 89, *hygini*, Canada, p. 650, pl. xv, fig. 85, and xvi, figg. 93, 94, *hyrtaci*, British Columbia, p. 652, pl. xvi, figg. 92, 95, ROTHSCHILD, t. c.; *C. hesperomys*, New Hampshire, BAKER, p. 428, P. U. S. Mus. xxvii : **n. spp.**
- Lycopsylla n. g.* near *Pulex*, *L. novus n. sp.*, N. S. Wales, pl. vii, figg. 1-4, ROTHSCHILD, p. 602, Nov. Zool. xi.
- Malacopsylla* = (*Megapsylla* Baker), ROTHSCHILD, p. 603, t. c.
- M. androcli*, Brazil, p. 604, pl. vii, fig. 10 and viii, figg. 11-15, *agenoris*, Argentina, p. 606, pl. vii, figg. 5-9, and viii, fig. 13, ROTHSCHILD, t. c. **n. spp.**
- Pulex irritans, simulans*, ? identical, WEBSTER, p. 244, Canad. Ent. xxxvi.
- P. murinus*, Italy on rats (?= *cheopis* Rothsch.), TIRABOSCHI, p. 252, cut, p. 251, Arch. parasit. viii; *P. mycerini*, p. 1, *ramesis, pyramidis*, p. 3, Egypt, ROTHSCHILD, Entomologist 1904; *P. creusa*, p. 608, pl. viii, fig. 18, and ix, fig. 25, *erilli*, p. 610, pl. viii, figg. 16, 17, and ix, fig. 22, *eridos*, p. 611, pl. viii, fig. 21, and ix, fig. 23, *riggenbachi*, p. 611, pl. viii, figg. 19, 20, and ix, fig. 24, Cape Colony, *australis*, Mexico and S. America, p. 613, pl. ix, fig. 29, and x, figg. 34, 36, *cleophontis*, Buenos Aires, p. 614, pl. x, fig. 32, *concitus*, p. 615, pl. x, figg. 38, 40; *simonsi*, p. 616, pl. ix, fig. 30, and x, fig. 37, Bolivia, *cocyti*, p. 617, pl. ix, fig. 26, and x, fig. 31, *corfidii*, p. 619, pl. ix, fig. 27, and x, fig. 33, Chile, *klagesi*, Venezuela, p. 620, pl. ix, fig. 28, and x, figg. 35, 39, ROTHSCHILD, Nov. Zool. xi; *P. brasiliensis*, on *Mus*, p. 379, *lutzii*, on *Grisson*, p. 380, S. America, *anomalus*, Colorado, p. 381, *affinis*, Arizona on *Lepus*, p. 382, *lynx*, Idaho on *Lynx*, p. 383, BAKER, P. U. S. Mus. xxvii : **n. spp.**
- Sarcopsylla rhynchopsylla*, Italy, on rats, TIRABOSCHI, p. 309, Arch. parasit. viii, **n. sp.**
- Stephanocircus* and *Hystrichopsylla*, distinguished, species of *S.*, synonymy of species found on *Dasyurus maculatus*, RAINBOW, pp. 53-55, Rec. Austral. Mus. v.
- Typhloceras rosenbergi*, Ecuador, p. 639, pl. xiii, figg. 68, 69, and xiv, figg. 71, 74, ROTHSCHILD, Nov. Zool. xi, **n. sp.**
- Typhlopsylla tristis* to *Ceratophyllus*, p. 625, pl. xi, figg. 45, 47, ROTHSCHILD, t. c.
- T. monticola*, Bosnia, KOHAUT, p. 87, Ann. Mus. Hungar. ii, **n. sp.**; also p. 88, Allatt. Kozl. Magyar Tars. iii.
- Xestopsylla n. g.* for *Sarcopsylla gallinacea*, BAKER, p. 374, P. U. S. Mus. xxvii.

(E.) *HEMIPTERA* OR *RHYNCHOTA*.

The trophi, classification, 2 new suborders, *Sandaliorrhyncha* fossil, *Conor-rhyncha* for *Thaumatoxena*, BÖRNER (157).

Conorrhyncha n. suborder for the following :

Thaumatoxena n. g. (?), *T. wasmanni* n. sp., Natal with *Termes natalensis*, BREDDIN & BÖRNER, pp. 84-94, SB. Ges. naturf. Berlin 1904.

Cimex : the type of, KIRKALDY & W. T. B., Nature lxi, pp. 464, 465.

KIRKALDY proposes 77 new generic names, and gives a list of others not included in Scudder or Waterhouse ; Entomologist 1904, pp. 279-283.

New *Paleohemiptera*, Permian, Russia, see HANDLIRSCH, Palæoentomology, p. 125.

Alaska *Heteroptera*, reprint, HEIDEMANN (672).

Effect of stink of *Hemiptera*, CONRADI (306).

Notes on habits and young of 15 species, XAMBEU (1539).

HEMIPTERA-HETEROPTERA.

PENTATOMIDÆ.

[Cf. BERGROTH (102, 105), BREDDIN (165, 167, 168, 169, 171), DISTANT (388, 390), HORVÁTH (715, 717), JAKOVLEFF (754, 755, 757), MARTIN (918), REUTER (1163), SCHOUTEDEN (1235-1239), VAN DUZEE (1430).]

The genera of *Scutellerinæ* with lists of the species, SCHOUTEDEN, Scutellerinæ, Wytsman Gen. Ins. fasc. xxiv, 98 pp., 5 plates.

Annotated list of *Pentatomidæ* of America north of Mexico, and descriptions of 12 spp. n., VAN DUZEE, Tr. Amer. ent. Soc. xxx, pp. 1-80.

Damellera n. n. for *Damelia*, *Montandoneus* n. n. for *Gabonia*, *Atelias* n. n. for *Ætius*, *Texas* n. n. for *Melanostoma*, *Grimgerda* n. n. for *Macrothyreus*, *Menuthias* n. n. for *Ilerda* ; *Bergthora* n. n. for *Cryptoporus*, *Xosa* n. n. for *Anubis*, *Acanthidiellum* n. n. for *Acanthidium*, *Stictocoris* n. n. for *Stictonotus*, *Liodermion* n. n. for *Lioderma*, *Gueriniellus* n. n. for *Platycoris*, *Burma* n. n. for *Paramecus*, *Eupododus* n. n. for *Pododus*, *Ochisme* n. n. for *Trachyops*, *Dolichisme* n. n. for *Petrisia*, KIRKALDY, p. 280, Entomologist 1904.

Acanthosoma cruciata var. n. *cooleyi*, VAN DUZEE, p. 74, Tr. Amer. ent. Soc. xxx.

A. korolkovi, Manchuria, JAKOVLEFF, Rev. russe Ent. 1904 ; *A. atricornis*, Montreal, VAN DUZEE, p. 75, Tr. Amer. ent. Soc. xxx : n. spp.

Afraniella n. g. near *Afrania*, for *A. lambaremi* n. sp., Congo, SCHOUTEDEN, p. 137, Ann. Soc. ent. Belgique xlviii.

Agonoscelis versicolor var. n. *tibialis*, HORVÁTH, p. 261, table of African *Ag.* p. 262, Ann. Mus. Hungar. ii.

A. cognata, E. Africa, HORVÁTH, p. 260, t. c. n. sp.

Alamprella n. g. near *Geotomus*, *A. singularis* n. sp., Guinea, HORVÁTH, p. 354, t. c.

Antestia philippina n. n. for *confusa* Br., BREDDIN, p. 10, Wien. ent. Zeit. xxiii.

A. gibba, New Guinea, BREDDIN, p. 10, t. c. n. sp.

- Asaca punctiventris*, Tonkin, BREDDIN, p. 10, t. c. **n. sp.**
Aspavia escaleraei, Cameroons, SCHOUTEDEN, p. 157, Mem. Soc. Espan. i, **n. sp.**
Aspideurus metallicus, Java, BREDDIN, p. 10, Wien. ent. Zeit. xxiii, **n. sp.**
Atelides sumatranus, Sumatra, BREDDIN, p. 18, t. c. **n. sp.**
Aspongopus viduatus, "melon-bug," plate B, p. 43, BALFOUR, 1st Rep. Wellcome Lab.
Basicryptus nigromaculatus, E. Africa, SCHOUTEDEN, p. 141, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Bathycalia nesophila, malachitica, St. Thomé isld., HORVÁTH, p. 268, Ann. Mus. Hungar. ii, **n. spp.**
Bergrothina **n. g.** *Pentat.*, *camerunensis* **n. sp.**, W. Africa, SCHOUTEDEN, p. 155, Mem. Soc. espan. i.
Brachyaulax oblonga var. *n. splendens*, SCHOUTEDEN, p. 297, Ann. Soc. ent. Belgique xlviii.
Brachyplatys rubromaculatus, Guinea, SCHOUTEDEN, p. 142, Mem. Soc. espan. i, **n. sp.**
Brachyrhamphus haglundii, Cameroons, SCHOUTEDEN, p. 151, t. c. **n. sp.**
Brachystethus coxalis, Peru, Chiriqui, BREDDIN, p. 178, Soc. ent. xviii, **n. sp.**
Brepholoxa **n. g.** near *Liotropis*, *B. heidemanni* **n. sp.**, Florida, VAN DUZEE, p. 78, Tr. Amer. ent. Soc. xxx.
Brochymena affinis, California, VAN DUZEE, p. 29, t. c. **n. sp.**
Callidea haglundii, Trop. Africa, p. 42, SCHOUTEDEN, Rhynch. æthiop. **n. sp.**
Calliscyta australis, SCHOUTEDEN, p. 296, Ann. Soc. ent. Belgique xlviii.
Carbula teretipes, Madagascar, HORVÁTH, p. 260, Ann. Mus. Hungar. ii, **n. sp.**
Caura excelsa var. *n. limbata*, HORVÁTH, p. 257, t. c. ; *C. excelsa* = (*insignis* Schout.), SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii.
Chelysoma glirina, Brazil, BERGROTH, p. 354, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Chilocoris assmuthi, p. 407, *solenopsidis*, p. 408, India, myrmecophilous, BREDDIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Chipatula agilis, E. Africa, SCHOUTEDEN, p. 135, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Cocalus assimilis, E. Africa, HORVÁTH, p. 257, Ann. Mus. Hungar. ii, **n. sp.**
Cocqueliu ventralis, Madagascar, HORVÁTH, p. 263, t. c. **n. sp.**
Corimelana sayi **n. n.** for *albipennis* Say, VAN DUZEE, p. 10, Tr. Amer. ent. Soc. xxx.
C. gillettii, New Jersey, VAN DUZEE, p. 8, t. c. ; *C. major*, Brazil, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
Dalcantha angularis, Sumatra, p. 18, *alata*, Tonkin, p. 19, BREDDIN, Wien. ent. Zeit. xxiii, **n. spp.**
Dalpada perelegans, Tonkin, BREDDIN, p. 1, t. c. **n. sp.**
Dalsira brunni, Cameroons, SCHOUTEDEN, p. 142, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Dandinus **n. g.** near *Æschrus*, p. 264, for *D. crassus* **n. sp.**, N. Queensland, p. 265, DISTANT, Ann. Nat. Hist. xiii.
Deroplax circumducta varr. and synonymy, SCHOUTEDEN, p. 301, Ann. Soc. ent. Belgique xlviii.
Discocephala andina, Ecuador, BREDDIN, p. 58, Soc. ent. xix, **n. sp.**
Dolycoris penicillatus, Turkestan, HORVÁTH, p. 580, Ann. Mus. Hungar. ii, **n. sp.**
Dystus villosus, Bolivia, BREDDIN, p. 153, Soc. ent. xviii, **n. sp.**
Edessa suturata var. *n. subandina*, p. 135, *E. oxyacantha*, p. 138, *quadridens*, p. 140, *infulata*, p. 143, *metata*, p. 145, *meditabunda*, p. 152, sex characters, BREDDIN, SB. Ges. naturf. Berlin 1904.
E. schirmeri, *pachyacantha*, p. 136, *leptacantha*, p. 139, *brachyacantha*,

- p. 140, *bærneri*, p. 141, *handlirschi*, p. 142, *leprosula*, p. 144, *boopis*, p. 146, *keymonsi*, p. 147, *verhoeffi*, *perscita*, p. 149, *capito*, p. 151, *cogitabunda*, p. 153, S. America, BREDDIN, t. c.; *E. infulata*, Peru, *oxyacantha*, Bolivia, BREDDIN, p. 50, Soc. ent. xix; *E. vernicosa*, *hædulus*, Ecuador, *hirculus*, Bolivia, BREDDIN, t. c. p. 178 : **n. sp.**
- Elvisura minor*, Trop. Africa, SCHOUTEDEN, Rhynch. æthiop. p. 6, **sp. n.**
- Empysarus n. g.* *Tesseratominae*, p. 315, *E. depressus n. sp.*, S. India, p. 316, MARTIN, Bull. Mus. Paris 1904.
- Epicoleotichus subg. n.* of *Coleotichus*, SCHOUTEDEN, p. 6, *Scutellerinae*.
- Eucenaria n. g.* near *Ænaria*, *E. jucunda n. sp.*, Tonkin, BREDDIN, p. 2, Wien. ent. Zeit. xxiii.
- Eumecopus abdominalis*, p. 263, *pallescent*, p. 264, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, **n. spp.**
- Eurinome armata*, N. Guinea, BREDDIN, p. 4, Wien. ent. Zeit. xxiii, **n. sp.**
- Eurostus heros*, Tonkin, BREDDIN, p. 16, t. c. **n. sp.**
- Eurygaster carinatus*, Utah, VAN DUZEE, p. 18, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Eusarcoris gibbosus*, Corea, JAKOVLEFF, p. 23, Rev. Russe Ent. iv; *E. V-flavum*, Madagascar, HORVÁTH, p. 259, Ann. Mus. Hungar. ii : **n. spp.**
- Eusthenes diomedes*, Tonkin, BREDDIN, p. 15, Wien. ent. Zeit. xxiii, **n. sp.**
- Exithemus mansonicus*, Tonkin, BREDDIN, p. 6, t. c. **n. sp.**
- Fokkeria n. g.* *Scutellerides*, *F. crassa n. sp.*, N. America, SCHOUTEDEN, p. 301, Ann. Soc. ent. Belgique xlvi.
- Galeacius martini*, Minas Geraes, SCHOUTEDEN, p. 299, t. c.; *G. simplex*, Peru, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
- Gastroxys n. g.* near *Diploxys*, p. 257, *G. funerea n. sp.*, E. Africa, p. 258, HORVÁTH, Ann. Mus. Hungar. ii.
- Geomorpha junodi*, Transvaal, DISTANT, p. 350, Ann. Nat. Hist. xiii, **n. sp.**
- Glypsus carinulatus*, Soudan, BERGROTH, p. 32, Rev. Russe Ent. iv; *G. bouvieri*, Congo, p. 140, *kuhlgatzi*, Africa, p. 141, SCHOUTEDEN, Ann. Soc. ent. Belgique xlvi : **n. spp.**
- Gnathoconus elongatus*, Transvaal, DISTANT, p. 349, Ann. Nat. Hist. xiii, **n. sp.**
- Gonaulax n. g.* p. 57, *G. bergrothi n. sp.*, Usambara, p. 59, pl. i, fig. 8, SCHOUTEDEN, Rhynch. æthiop.
- Gonopsis tonkinensis*, Tonkin, BREDDIN, p. 19, Wien. ent. Zeit. xxiii, **n. sp.**
- Haullevillea n. g.* near *Amauropepla*, *H. denticulata n. sp.*, Trop. Africa, SCHOUTEDEN, p. 126, Rhynch. æthiop.
- Iphiarusa n. g.* near *Hoffmannseggella*, p. 12, *I. aratrix n. sp.*, Tonkin, p. 13, BREDDIN, Wien. ent. Zeit. xxiii.
- Irochrotus montandoni*, Senegal, p. 88, SCHOUTEDEN, Rhynch. æthiop.; *I. indicus*, Bengal, SCHOUTEDEN, p. 303, Ann. Soc. ent. Belgique xlvi : **n. spp.**
- Kayesia n. g.* near *Podops*, *K. parva n. sp.*, Soudan, SCHOUTEDEN, p. 114, Rhynch. æthiop.
- Laccophorella n. g.* *Acanthosominae*, *L. bornemisæ n. sp.*, E. Africa, HORVÁTH, p. 270, Ann. Mus. Hungar. ii.
- Lerida bolivari*, Guinea, SCHOUTEDEN, p. 146, Mem. Soc. espan. i, **n. sp.**
- Lincus securiger*, *dentiger*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. spp.**
- Lobopelta n. g.* *Phyllocephalinae*, p. 142, for *L. funebris n. sp.*, Congo, p. 143, SCHOUTEDEN, Ann. Soc. ent. Belgique xlvi.
- Lobothyreus brasiliensis*, Brazil, SCHOUTEDEN, p. 300, t. c. **n. sp.**
- Macroscytus inermipes*, St. Thomé isld., HORVÁTH, p. 253, Ann. Mus. Hungar. ii, **n. sp.**
- Malgassus exiguus*, Madagascar, HORVÁTH, p. 269, t. c. **n. sp.**
- Megadæum*, characters and position, BERGROTH, p. 37, Wien. ent. Zeit. xxiii.
- M. obliquum*, Cameroons, id. p. 39, t. c. **n. sp.**

- Melanodermus dilutipes*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. sp.**
Miopygium n. g. near *Macropygium*, *M. cyclopeltoides n. sp.*, Rio Grande do Sul, BREDDIN, p. 153, t. c.
Montandoniella n. g. *Plataspidinae*, *femorata n. sp.*, Guinea, SCHOUTEDEN, p. 144, Mem. Soc. Espan. i.
Morbora hirtula, Tasmania, *schoutedeni*, Queensland, BERGROTH, p. 356, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Moyara martini, Uganda, SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Nealeria diminuta, Madagascar, HORVÁTH, p. 255, Ann. Mus. Hungar. ii, **n. sp.**
Nezara bergrothi, p. 263, *liturata*, *valida*, p. 264, Madagascar, *limbosa*, p. 265, *adelpha*, *macrorhaphis*, p. 266, W. Africa, *rufidorsum*, Madagascar, p. 267, HORVÁTH, t. c. **n. spp.**
Ochrorrhaca n. g. near *Ochrophara*, *O. truncaticornis n. sp.*, Tonkin, BREDDIN, p. 3, Wien. ent. Zeit. xxiii.
Odontoscelis balli, p. 19, *producta*, p. 20, Colorado, VAN DUZEE, Tr. Amer. ent. Soc. xxx, **n. spp.**
Oncinoproctus n. g. near *Eurinome*, *O. griseolus n. sp.*, Sikkim, BREDDIN, p. 5, Wien. ent. Zeit. xxiii.
Oncodochilus cruciatulus, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**
Oplomus cruentus var. *n. inermis*, SCHOUTEDEN, p. 140, Ann. Soc. ent. Belgique xlviii.
O. sagax, Bolivia, BREDDIN, p. 49, Soc. ent. xix; *O. severus*, Peru, BREDDIN, p. 177, t. c. **n. spp.**
Palomena limbata, Koukou-noor, JAKOWLEW, p. 71, Horae Soc. ent. Ross. xxxvii, **n. sp.**
Parabolbocoris n. g. *Graphosomatinae*, *P. signoreti n. sp.*, Bogos, SCHOUTEDEN, p. 106, Rhynch. æthiop.
Paracoleotichus subg. *n.* of *Coleotichus*, SCHOUTEDEN, p. 6, Scutellerinae.
Parapæcilocoris subg. *n.*, SCHOUTEDEN, p. 21, t. c.
Parochlerus n. g. near *Ochlerus*, *P. latus n. sp.*, Peru, BREDDIN, p. 153, Soc. ent. xviii.
Pentatoma (Rhytidolomia) osborni, Colorado, VAN DUZEE, p. 37, Tr. Amer. ent. Soc. xxx, **n. sp.**
Peribalus tristis, Vancouver, VAN DUZEE, p. 33, t. c. **n. sp.**
Periphymopsis subg. *n.*, SCHOUTEDEN, p. 78, Scutellerinae.
Philia regia=(*leucochalea* Bredd.) *area*=(*compacta* Bredd.), DISTANT, p. 276, Ann. Nat. Hist. xiii; *P. jactator*=(*fenestrata* Bredd.), DISTANT, p. 66, op. cit. xiv.
P. insignis, N. S. Wales, SCHOUTEDEN, p. 297, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Phimodera, the variation and synonymy, *P. humeralis* var. *n. dalmanni*, p. 6, REUTER, Ofv. Finska Forh. xvi, No. 17, 15 pp.
P. corrugata, Colorado, VAN DUZEE, p. 16, Tr. Amer. ent. Soc. xxx, **n. sp.**
Phlæa, its mimicry, PÉREZ, p. 429, C.R. Soc. Biol. Ivi.
Platynopus fallax, *horvathi*, Africa, SCHOUTEDEN, p. 139, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Plisthenes buruensis, Buru, BREDDIN, p. 179, Wien. ent. Zeit. xxiii, **n. sp.**
Podisus cynicus, *bracteatus*, distinctions, sex characters, HEIDEMANN, pp. 9, 10, cuts, P. ent. Soc. Washington vi.
P. blanditor, Peru, BREDDIN, p. 46, Soc. ent. xix; *P. carbonarius*, Centr. America, *neniator*, *carnifex*, S. America, BREDDIN, p. 154, t. c.: **n. spp.**
Podops parvulus, N. America, VAN DUZEE, p. 22, Tr. Amer. ent. Soc. xxx, **n. sp.**
Polytes insignis, Bolivia, SCHOUTEDEN, p. 298, Ann. Soc. ent. Belgique xlviii; *P. cingulicornis*, Brazil, BERGROTH, p. 354, Ann. Soc. ent.

- Belgique xlviii; *P. onca, griseus*, Peru, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
- Ponsila escalerai*, Guinea, SCHOUTEDEN, p. 142, Mem. Soc. Espan. i, **n. sp.**
- Prionocompastes vicarians*, Java, BREDDIN, p. 14, Wien. ent. Zeit. xxiii, **n. sp.**
- Rhynchocoris patulus*, Java, BREDDIN, p. 12, t. c. **n. sp.**
- Runibia picturata*, Peru, BREDDIN, p. 177, Soc. ent. xviii, **n. sp.**
- Sabæus rectispinus*, Java, p. 8, *teretispinus*, Sumbawa, *fortispinus*, Buru?, p. 9, BREDDIN, Wien. ent. Zeit. xxiii, **n. spp.**
- Scotinophara curvispina*, p. 123, E. Africa, *madagascariensis*, Madagascar, p. 125, SCHOUTEDEN, Rhynch. æthiop. **n. spp.**
- Sepidiocoris n. g.* p. 127, *Graphosomatinae*, *S. noualhieri n. sp.*, W. Africa, p. 128, SCHOUTEDEN, t. c.
- Severinina n. g.* near *Melanophara*, p. 116, *S. bergrothi n. sp.*, Congo, pl. ii, fig. 10, p. 117, SCHOUTEDEN, Rhynch. æthiop.; *Severinina* and allies, characters amended, SCHOUTEDEN, p. 135, Ann. Soc. ent. Belgique xlviii.
- Sibaria andicola*, Ecuador, BREDDIN, p. 49, Soc. ent. xix, **n. sp.**
- Stenozygum bergrothi n. n.* for *bicolor* Sch., SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii.
- S. mombasanum*, E. Africa, SCHOUTEDEN, p. 137, t. c.; *S. varelai*, Cameroons, SCHOUTEDEN, p. 158, Mem. Soc. Espan. i : **n. spp.**
- Supputius obscurus*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. sp.**
- Symphylus enac*, Bolivia, BREDDIN, p. 49, op. cit. xix, **n. sp.**
- Tarisa chloris*, Turkestan, HORVÁTH, p. 580, Ann. Mus. Hungar. ii, **n. sp.**
- Tectocoris lineola*, habits, stages, eggs, DODD, pp. 483–485, Tr. ent. Soc. London 1904.
- Tesseratoma niemensis*, Africa, SCHOUTEDEN, p. 143, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tetrochlerus n. g.* near *Ochlerus*, *T. fissiceps n. sp.*, Ecuador, BREDDIN, p. 153, Soc. Ent. xviii.
- Theseus nigrescens*, N. Queensland, DISTANT, p. 263, Ann. Nat. Hist. xiii, **n. sp.**
- Thyanta punctiventris*, p. 55, *brevis*, p. 56, Colorado, VAN DUZEE, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Tolumnia ferruginescens*, Tonkin, BREDDIN, p. 7, Wien. ent. Zeit. xxiii, **n. sp.**
- Triplatyx n. g.* near *Eurus*, p. 255, *T. quadraticeps n. sp.*, Madagascar, p. 256, HORVÁTH, Ann. Mus. Hungar. ii.
- Vanduzeeina n. g.* *Odontoscelis balli*, SCHOUTEDEN, p. 85, Scutellerinæ.
- Xerobia stali*, Somaliland, p. 87, SCHOUTEDEN, Rhynch. æthiop. **n. sp.**

COREIDÆ.

[Cf. BREDDIN (166, 171), DISTANT (388–391), GIARD (597), JAKOVLEFF (754, 755), OSBORN (1001).]

Althos n. n. for *Margus*, *Nanichisme n. n.* for *Nesiotes*, *Dersagrena n. n.* for *Dalcera*, *Elachisme n. n.* for *Elathea*, *Ouranion n. n.* for *Bardistus*, *Marichisme n. n.* for *Phidippus*, *Hæckelia n. n.* for *Microphyllia*, KIRKALDY, p. 280, Entomologist 1904.

Oviposition of *Pseudophlæus* and *Phyllomorpha*, GIARD, p. 107, Feuille Natural. xxxiv.

Acanthocephala declivis var. *n. guianensis*, OSBORN, p. 198, Ohio Natural. v.

Anasa tristis, copula eggs, parasite, GIRAULT, Ent. News Philad. xv, p. 335.

A. jucunda, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**

Carlisis serrabilis, Transvaal, DISTANT, p. 350, Ann. Nat. Hist. xiii, **n. sp.**

Coriomeris validicornis, Transcaucasus, p. 293, *integerrimus*, Nan-shan, p. 294, JAKOVLEFF, Rev. Russe Ent. 1904, **n. spp.**

- Holymenia tibialis*, *rubiginosa*, S. America, BREDDIN, p. 147, Soc. ent. xviii, **n. spp.**
- Hyalymenus* (*Tivarbus*) *calcarator*, Bolivia, BREDDIN, t. c. p. 148, **n. sp.**
- Hypselonotus fuscus*, Bolivia, OSBORN, p. 199, Ohio Natural. v, **n. sp.**
- Kennetus* **n. g.** *Mictaria*, p. 303, for *K. alces* **n. sp.**, Borneo, p. 304, DISTANT, Ann. Nat. Hist. xiii.
- Lycambes sargi*, Guatemala, BREDDIN, p. 306, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Mercennus* **n. n.** for *Melania* Dist., DISTANT, p. 304, Ann. Nat. Hist. xiii.
- Mictis loricata*, Congo, DISTANT, p. 61, op. cit. xiv, **n. sp.**
- Mirperus nigrofasciatus*, *robustus*, Transvaal, DISTANT, p. 352, op. cit. xiii, **n. spp.**
- Myrmus formosus*, Baikal, JAKOVLEV, p. 93, Rev. Russe Ent. iv, **n. sp.**
- Nematopus nigriventris*, Ecuador, *rufipes*, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. spp.**
- Plinactus trilineatus*, Transvaal, DISTANT, p. 351, Ann. Nat. Hist. xiii, **n. sp.**
- Pomponatus* **n. g.** near *Chærommatus*, p. 265, for *P. typicus* **n. sp.**, N. Queensland, p. 266, DISTANT, t. c.
- Trachelium mimeticum*, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**

LYGÆIDÆ and PYRRHOCORIDÆ.

[Cf. BREDDIN (170, 171), DISTANT (386, 388, 390), HORVÁTH (714, 717), JAKOVLEFF (754, 756), OSBORN (1001), UHLER (1416).]

- Antilocoris* **n. n.** for *Pygæus*, *Botocudo* **n. n.** for *Salacia*, *Probergrothius* **n. n.** for *Odontopus*, *Peggichisme* **n. n.** for *Davila*, *Polychisme* **n. n.** for *Imbrius*, KIRKALDY, p. 280, Entomologist 1904.
- Acroleucus eros*, *pothus*, Ecuador, BREDDIN, p. 148, Soc. ent. xviii, **n. spp.**
- Anorygma* **subg. n.** cf. *Phænacantha*.
- Aphanus atomarius*, Transvaal, DISTANT, p. 353, Ann. Nat. Hist. xiii, **n. sp.**
- Brachyphyma* **n. g.** p. 144, *B. argutum*, *ochraceum*, p. 145, *papuense*, p. 146, **n. spp.**, New Guinea, HORVÁTH, Ann. Mus. Hungar. ii.
- Calliseidus* **n. g.** p. 153, *C. nigricollis* **n. sp.**, Peru, p. 154, HORVÁTH, t. c.
- Chauliops rutherfordi*, Old Calabar, DISTANT, p. 277, Entomologist 1904, **n. sp.**
- Colobasiastes*, insertion of antennæ, p. 245, cut, BREDDIN, Wien. ent. Zeit. xxiii.
- C. similis*, p. 162, *longicornis*, p. 163, *obscurus*, p. 166, *rufiventris*, p. 167, Peru, HORVÁTH, Ann. Mus. Hungar. ii; *C. analis*, Bolivia, BREDDIN, p. 249, Wien. ent. Zeit. xxiii : **n. spp.**
- Colobathristine*, monograph, HORVÁTH, pp. 117-172, Ann. Mus. Hungar. ii.
- Colobathristes egregius*, Brazil, *facetus*, hab. l., HORVÁTH, p. 151, t. c. **n. spp.**
- Diascopea* **n. g.** p. 154, *D. discessa*, p. 155, *debilis*, p. 156, **n. spp.**, Peru, HORVÁTH, t. c.
- Dieuches scutellatus*, *consanguineus*, N. Queensland, DISTANT, p. 268, Ann. Nat. Hist. xiii, **n. spp.**
- Emblethis brevicornis*, Turkestan, HORVÁTH, p. 582, Ann. Mus. Hungar. ii; *E. luridus*, E. Turkestan, JAKOVLEFF, p. 24, Rev. Russe Ent. iv : **n. spp.**
- Fontejanus wasmanni*, amplified description, BREDDIN, pp. 410-412, cut, Ann. Soc. ent. Belgique xlviii.
- Geocoris* (*Picocoris*) *chinensis*, Sé-tschuen, JAKOVLEV, p. 170, t. c.; *G. elongatulus*, N. Queensland, DISTANT, p. 267, Ann. Nat. Hist. xiii : **n. spp.**
- Germulus lineolosus*, N. Queensland, DISTANT, p. 266, t. c. **n. sp.**
- Lygæus sulcatus*, Guiana, OSBORN, p. 200, Ohio Natural. v, **n. sp.**

- Microtoma præusta*, Alaï, JAKOVLEFF, p. 23, Rev. Russe Ent. iv, **n. sp.**
Narcegaster n. g. for *Colobathristes geniculatus* St., HORVÁTH, p. 141, Ann. Mus. Hungar. ii.
Nysius pilosulus, Turkestan, HORVÁTH, p. 581, t. c.; *N. rubromaculatus*, Transvaal, DISTANT, p. 352, Ann. Nat. Hist. xiii : **n. spp.**
Oxycarenus scabrosus, New Mexico, UHLER, p. 353, P. U. S. Mus. xxvii, **n. sp.**
Pamera picturata, p. 267, *apicalis*, p. 268, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, **n. spp.**
Peruda longiventris, Peru, HORVÁTH, p. 170, Ann. Mus. Hungar. ii, **n. sp.**
Physopelta melanoptera, W. Africa, DISTANT, p. 61, Ann. Nat. Hist. xiv, **n. sp.**
Piptocentrus n. g. p. 157, *P. pilipes n. sp.*, Peru, p. 158, HORVÁTH, Ann. Mus. Hungar. ii.
Phænacantha n. g. p. 120, *P. biroi*, p. 124, *suturalis*, p. 125, *consobrina*, *ambigua*, p. 126, *femoralis*, p. 127, *unicolor*, *conviva*, p. 128, *mehelyi*, p. 129, New Guinea, *sedula* with var. *melanoscelis*, p. 130, *gestroi*, Sumatra, *strenua*, p. 131, *antennalis*, p. 132, *pilosella*, p. 133, *discrepans*, p. 134, New Guinea, *confusa*, Philippines, p. 135, *pacifica*, Fiji, p. 136, *P. (Anorygma* subg. n., p. 137) *solers*, Burma, *viridipennis*, Tenasserim, p. 139, **n. spp.**, HORVÁTH, t. c.
Rhyparochromus compactus, New Mexico, UHLER, p. 354, P. U. S. Mus. xxvii, **n. sp.**
Symphylax n. g. p. 142, *S. picticollis n. sp.*, with varr. *blandus*, *confluens*, Sumatra, etc., p. 143, HORVÁTH, Ann. Mus. Hungar. ii.
Tagalisca subg. n. of *Phænacantha*, for *Colobathristes pallidus* St., HORVÁTH, p. 140, t. c.
Taphrocranium n. g. for *Colobathristes robustus* Bredd., HORVÁTH, p. 147, t. c.
Trichocentrus n. g. p. 152, *T. gibbosus n. sp.*, Brazil, p. 153, HORVÁTH, t. c.

TINGIDÆ.

- Corythuca marmorata*, life-history, FELT, pp. 125-129, pls. iii, iv, Bull. N. York Mus. lxxvi.
Phyllochisme n. n. for *Physatochila* L. & S., *Mæcenus n. n.* for *Tingis*, *Gelchossa n. n.* for *Leptostyla*, KIRKALDY, p. 280, Entomologist 1904.

ARADIDÆ and PHYMATIDÆ.

[Cf. DISTANT (386), HEIDEMANN (670, 671).]

- Aneurys fiskei*, N. Carolina, HEIDEMANN, p. 164, P. ent. Soc. Washington vi, **n. sp.**
Aradus uniformis, p. 231, *hubbardi*, p. 232, N. America, HEIDEMANN, t. c. **n. spp.**
Neuroctenus hopkinsi, North Carolina, HEIDEMANN, p. 163, t. c. **n. sp.**
Proxius schwarzii, Florida, HEIDEMANN, p. 230, t. c. **n. sp.**
Glossopelta dudgeoni, Kangra, DISTANT, p. 277, Entomologist 1904, **n. sp.**

HYDROMETRIDÆ.

- Gerris thoracicus* var. n. *rapidus*, HORVÁTH, p. 582, Ann. Mus. Hungar. ii.
Metrocoris, table of species, KIRKALDY, p. 61, Entomologist 1904.
M. distanti, Zoutpansberg, id. p. 62, t. c. **n. sp.**
Velia brunnea, Bolivia, OSBORN, p. 204, Ohio Natural. v, **n. sp.**

REDUVIIDÆ.

[Cf. BERGROTH (103), BREDDIN (167, 171), DISTANT (383, 388, 390), HORVÁTH (717), JAKOVLEFF (754), NOUALHIER (984), OSBORN (1001), VARELA (1431, 1432).]

Westermannias **n. n.** for *Westermannia*, *Isachisme* **n. n.** for *Algol*, *Peregrinator* **n. n.** for *Microleptes*, *Mestor* **n. n.** for *Lamus*, *Brontostoma* **n. n.** for *Mindarus*, KIRKALDY, p. 280, Entomologist 1904.

BREDDIN notes various forms of larval *Reduviidæ*, found in the nests of Termites and Ants in India and Africa, Ann. Soc. ent. Belgique xlviii, pp. 412–416.

Acanthaspis (*Plynus*) *breddini*, Cameroons, VARELA, p. 55, Bol. Soc. espan. iv; *A. sericata*, p. 258, *porrecta*, p. 261, Ceylon, *zebraica*, Burma, p. 264, *siva*, p. 265, *rama*, p. 268, India, DISTANT, Faun. Brit. India Rhynchota ii; *A. varivivenis*, Siam, NOUALHIER, p. 174, pl. x, fig. 1, Mission Pavie iii: **n. spp.**

Alcmena straminipes, *maculosa*, India, DISTANT, p. 370, Faun. Brit. India Rhynchota ii, **n. spp.**

Allæorhynchus bengalensis, India, DISTANT, p. 394, t. c. **n. sp.**

Apiomerus lobulatus, Ecuador, BREDDIN, p. 148, Soc. ent. xviii, **n. sp.**

Arcesius fuscus, Burma, DISTANT, p. 351, Faun. Brit. India Rhynchota ii, **n. sp.**

Audernacus **n. g.** for *Santosia atropictus* Dist. and *A. andamanensis* **n. sp.**, Andamans, DISTANT, p. 306, t. c.

Bayerus **n. g.** near *Santosia*, *B. cuneatus* **n. sp.**, Assam, DISTANT, p. 307, t. c.

Bartacus **n. g.** near *Epidaus* for *Cimex spinifex* Thunb., DISTANT, p. 374, t. c.

Brassivola **n. g.** near *Epidaus*, p. 373, *B. hystrix* **n. sp.**, Ceylon, p. 374, DISTANT, t. c.

Castolus (*Spinda*) *nigriventris*, Bolivia, BREDDIN, p. 148, Soc. ent. xviii, **n. sp.**

Centrocnemis dearmata, Ceylon, DISTANT, Faun. Brit. India Rhynchota ii, **n. sp.**

Cleptria escaleraei, Guinea, VARELA, p. 134, Mem. Soc. Espan. i, **n. sp.**

Conorrhinus megistus, attacks on man, POULTON, p. lxxvi, P. ent. Soc. London 1904.

Coranus mongolicus, E. Mongolia, JAKOVLEFF, p. 26, Rev. Russe Ent. iv, **n. sp.**

Croschius melanopterus = (*Castrucci* *insignis* Dist.), DISTANT, p. 276, Ann. Nat. Hist. xiii.

Dithmarus **n. g.** *Stenopodine*, p. 353, for *D. atromaculatus* **n. sp.**, Transvaal, p. 354, DISTANT, t. c.

Dodonæus **n. g.** near *Nabis*, p. 398, *D. humeralis* **n. sp.**, Sikhim, p. 399, DISTANT, Faun. Brit. India Rhynchota ii.

Durganda fulvrescens, Tenasserim, DISTANT, p. 283, t. c. **n. sp.**

Ectomocoris erebus, Burma, p. 292, *tibialis*, p. 293, *vishnu*, p. 296, India, DISTANT, t. c.

Edocla pelia, Pegu, DISTANT, p. 275, t. c. **n. sp.**

Elaphocranus **n. g.** *Petalochirine*, p. 357, *tarandus* **n. sp.**, Cameroons, p. 358, BERGROTH, Bol. Soc. espan. iv.

Endochus cinnamopteris, *straminipes*, Transvaal, DISTANT, p. 355, Ann. Nat. Hist. xiii; *E. atricapillus*, *umbrinus*, India, DISTANT, p. 367, Faun. Brit. India Rhynchota ii: **n. spp.**

Epidaus atrispinus, Sikhim, *parvus*, Burma, DISTANT, p. 372, t. c. **n. spp.**

Eriximachus **n. g.** near *Physorhynchus*, p. 323, *E. globosus* **n. sp.**, India p. 324, DISTANT, t. c.

- Euvonymus* **n. g.** *Acanthaspidinæ*, p. 244, *E. spiniceps* **n. sp.**, Ceylon, p. 245, DISTANT, t. c.
- Godefridus* **n. g.** *Apiomerinæ*, p. 328, *G. alienus* **n. sp.**, Burma, p. 329, DISTANT, t. c.
- Harpactor geniculatus*, Transcaucasus, JAKOVLEV, p. 94, Rev. Russe Ent. iv; *H. femoralis*, Transvaal, DISTANT, p. 355, Ann. Nat. Hist. xiii; *H. squalus*, Sikhim, DISTANT, p. 333, Faun. Brit. India Rhynchota ii, **n. spp.**
- Harpagocoris perspectans* varr. = (*bergrothi* and *affinis*), BERGROTH, p. 361, Bol. Soc. espan. iv.
- H. bergrothi*, p. 136, *affinis*, p. 137, *merceti*, *suspectus*, p. 138, W. Africa, VARELA, Mem. Soc. Espan. i, **n. spp.**
- Havinthus trochanterus*, N. Queensland, DISTANT, p. 269, Ann. Nat. Hist. xiii, **n. sp.**
- Henricohahnia gallus*, Nilgiri hills, DISTANT, p. 389, Faun. Brit. India Rhynchota ii, **n. sp.**
- Heteropinus discretus*, Guinea, VARELA, p. 131, Mem. Soc. Espan. i, **n. sp.**; characters, BERGROTH, op. cit. iv, p. 362.
- Libavius* **n. g.** near *Mendis*, *L. greeni* **n. sp.**, Ceylon, DISTANT, p. 313, Faun. Brit. India Rhynchota ii.
- Linschosteus* **n. g.** near *Conorhinus*, *L. carnifex* **n. sp.**, N. India, DISTANT, p. 287, t. c.
- Lisarda varelæ*, Cameroons, BERGROTH, p. 360, Bol. Soc. espan. iv, **n. sp.**
- Lorichius* **n. g.** near *Nabis*, *L. umbonatus* **n. sp.**, Ceylon, DISTANT, p. 402, Faun. Brit. India Reduv. ii.
- Marbodius* **n. g.** *Epiroderaria*, *M. exemplificatus* **n. sp.**, Ceylon, DISTANT, p. 248, t. c.
- Mastigonomus bolivari*, Guinea, VARELA, p. 136, Mem. Soc. Espan. i, **n. sp.**
- Nabis cinerascens*, Turkestan, HORVÁTH, p. 582, Ann. Mus. Hungar. ii; *N. tibialis*, Ceylon, p. 400, *funebilis*, *nigrescens*, p. 401, India, DISTANT, Faun. Brit. India Rhynchota ii : **n. spp.**
- Odontogonus* **n. n.** for *Laphyctes* Stål nec Reich., BERGROTH, p. 361, Bol. Soc. espan. iv.
- Phasmatocoris* **n. g.** *Emesiini*, *P. spectrum* **n. sp.**, Bolivia, BREDDIN, p. 148, Soc. ent. xviii.
- Phonerates (Clopophora) nuptura*, Cameroons, VARELA, p. 55, Bol. Soc. espan. iv, **n. sp.**
- Phonoctonus elegans*, Cameroons, VARELA, p. 56, t. c. **n. sp.**
- Phonolibes bimaculatus*, Transvaal, DISTANT, p. 354, Ann. Nat. Hist. xiii, **n. sp.**
- Physorhynchus pedestris*, p. 320, *malabaricus*, *talpus*, p. 321, *insignis*, *rubromaculatus*, p. 322, India, DISTANT, Faun. Brit. India Rhynchota ii, **n. spp.**
- Prostemma siamense*, Siam, NOUALHIER, p. 176, pl. x, fig. 2, Mission Pavie iii, **n. sp.**
- Quercetanus* **n. g.** near *Scadra*, p. 310, *Q. atromaculatus*, India, *relatus*, Ceylon, **n. spp.**, p. 311, DISTANT, Faun. Brit. India Rhynchota ii.
- Reduvius transnominalis* **n. n.** for *debilis* Reut., DISTANT, p. 251, t. c.
- R. knyveti*, p. 251, *esau*, *boyesi*, p. 252, *angiportus*, p. 253, India, DISTANT, t. c. **n. spp.**
- Rhaphidosoma tuberculatum*, Baluchistan, DISTANT, t. c. p. 330, **n. sp.**
- Rulandus* **n. g.** *Nabinæ*, *R. phædrus* **n. sp.**, Burma, DISTANT, p. 396, t. c.
- Santosia finitima*, Cameroons, VARELA, p. 133, Mem. Soc. Espan. i, **n. sp.**
- Scadra tibialis*, *scutellaris*, Assam, DISTANT, p. 309, Faun. Brit. India Rhynchota ii, **n. spp.**
- Seridentus* **n. g.** near *Shaumannia*, *S. denticulatus* **n. sp.**, Bolivia, OSBORN, p. 203, Ohio Natural. v.

- Sminthocoris* **n. n.** for *Smithus* Stål, DISTANT, p. 279, Faun. Brit. India Rhynchota ii.
Sphedanolestes dives, variabilis, India, DISTANT, p. 342, t. c. **n. sp.**
Stegius **n. g.** near *Physorhynchus*, p. 322, *S. pravus* **n. sp.**, Bengal, p. 323, DISTANT, t. c.
Sycanus inermis, Assam, *atrocyaneus*, Burma, DISTANT, p. 356, t. c. **n. spp.**
Tragelaphodes **n. g.** *Petalochirinae*, p. 358, *hirculus* **n. sp.**, Cameroons, p. 360, BERGROTH, Bol. Soc. espan. iv.
Villanovanus **n. g.** for *Endochus dichrous*, DISTANT, p. 364, Faun. Brit. India Rhynchota ii.

ANTHOCORIDÆ, CERATOCOMBIDÆ, HENICOCEPHALIDÆ,
 POLYCTENIDÆ.

Synonymy of Walker's *Anthocoridae*, DISTANT, p. 222, Ann. Nat. Hist. xiv.

- Amphiareus* **n. g.** for *Xylocoris fulvescens* Walk., DISTANT, p. 220, t. c.
Arnulphus **n. g.** for *A. aterrimus* **n. sp.**, Burma, DISTANT, p. 220, t. c.
Ceratocombus niger, p. 361, *lutipennis*, p. 362, New Mexico, UHLER, P. U. S. Mus. xxvii, **n. spp.**
Crescentius **n. g.** *Ceratocombinae*, p. 408, *C. principatus* **n. sp.**, Burma, p. 409, DISTANT, Faun. Brit. India Rhynchota ii.
Henicocephalus pugnatorius, Cape Colony, DISTANT, p. 278, Entomologist 1904, **n. sp.**
Lippomanus **n. g.** *Anthocoridae* for *L. hirsutus* **n. sp.**, Burma, DISTANT, p. 221, Ann. Nat. Hist. xiv.
Ostorodias **n. g.** *Anthocoridae* for *O. contubernalis* **n. sp.**, Himalaya, DISTANT, p. 219, t. c.
Phthirocoris **n. g.** *Henicocephalidae*, p. 786, for *P. antarcticus* **n. sp.**, Crozet Islands, p. 787, ENDERLEIN, Zool. Anz. xxvii.
Polycytenes intermedius, Egypt, SPEISER, p. 373, pl. xx, Zool. Jahrb. Suppl. vii, **n. sp.**
Sesellius **n. g.** *Anthocoridae* for *Anthocoris parallelus* Motsch., DISTANT, p. 221, Ann. Nat. Hist. xiv.
Sphigmocephalus **n. g.** for *Henicocephalus curculio* Karsch., ENDERLEIN, p. 783, Zool. Anz. xxvii.

CAPSIDÆ.

[Cf. DISTANT (383, 387, 388, 391), HORVÁTH (717), JAKOVLEFF (754), KIRKALDY (809), REUTER (1162–1169), UHLER (1416).]

- Metriorrhynchomiris* **n. n.** for *Metriorrhynchus*, *Zanchisme* **n. n.** for *Schizonotus*, *Kalanina* **n. n.** for *Baracus*, *Bertsu* **n. n.** for *Berta*, *Renterista* **n. n.** for *Brachybasis*, *Ragnar* **n. n.** for *Melanocoris*, *Poronotellus* **n. n.** for *Poronotus*, KIRKALDY, p. 280, Entomologist 1904.

DISTANT gives synonymy and summary of Walker's *Capsidae*; for details refer to the memoir, Ann. Nat. Hist. xiii, pp. 204–206 etc.

- Actinonotus pulcher* varr., REUTER, p. 3, Ofv. Finska Forh. xlv, No. 14.
Adelphocoris funebris, Corea, REUTER, p. 34, Rev. Russe Ent. iv; *A. funestus*, Mou-Pin, p. 7, *fasciaticollis*, p. 8, *melanocephalus*, p. 9, Pekin, REUTER, Ofv. Finska Forh. xlv, No. 16 : **n. spp.**
Agraptocoris **n. g.** p. 6, *concolor* **n. sp.**, p. 7, Mongolia, REUTER, op. cit. xlv, No. 4.
Æolocoris **n. g.** near *Acorrhinius*, *Æ. alboconsersus* **n. sp.**, Obock, pl. i, fig. 5, p. 17, REUTER, op. cit. xlv, No. 6.

- Allæonycha* **n. g.** near *Acrotelus*, p. 8, *mayri* **n. sp.**, Wiesbaden, p. 9, REUTER, op. cit. xlv, No. 14.
- Allæotomus chinensis*, Pekin, REUTER, p. 20, op. cit. xlv, No. 16, **n. sp.**
- Anapus flavicornis*, Borjom, REUTER, p. 5, op. cit. xlv, No. 14; *A. pectoralis*, Turkestan, HORVÁTH, p. 584, Ann. Mus. Hungar. ii : **n. spp.**
- Angerianus* **n. g.** *Cylaparia*, p. 437, *A. fractus*, *maurus* **n. spp.**, Tenasserim, p. 438, DISTANT, Faun. Brit. India Rhynchota ii.
- Annona smithi* (= *labeculata* Uhl. nec Dist.), Grenada, *antilleana* (= *Mala decoloris* Uhl.), St. Vincent, DISTANT, p. 62, Ann. Nat. Hist. xiv, **n. spp.**
- Araspus* **n. g.** *Bryocoraria* for *Lopus partilus* Walk., DISTANT, p. 112, op. cit. xiii.
- Arculanus* **n. g.** near *Disphinctus*, for *A. marshalli* **n. sp.**, Mashonaland, DISTANT, p. 198, t. c.
- Argenis* **n. g.** *Cylaparia*, for *Capsus incisuratus* Walk., DISTANT, p. 107, t. c.
- A. albobiridescens*, Ceylon, DISTANT, p. 435, Faun. Brit. India Rhynchota ii, **n. sp.**
- Armachanus* **n. g.** *Cyllocoraria*, p. 478, *A. monoceros* **n. sp.**, Ceylon, p. 479, DISTANT, t. c.; *A. spicatus*, N. W. Australia, DISTANT, p. 203, Ann. Nat. Hist. xiii, **n. sp.**
- Atomophora oculata*, p. 10, *maculosa*, p. 12, *suturalis*, p. 13, *albovittata*, p. 14, Transcaspian, REUTER, Ofv. Finska Forh. xlv, No. 4, **n. spp.**
- Atractotomus brevicornis* ♂, REUTER, p. 17, t. c. No. 14.
- Bothriomiris testaceus*, Burma, DISTANT, p. 470, Faun. Brit. India Rhynchota ii, **n. sp.**
- Callicratides* **n. g.** for *Capsus rama* Kirby, DISTANT, p. 417, t. c.
- Calocoris hispanicus* var. *n. bisignata*, *C. sexguttatus* var. *n. reducta*, REUTER, p. 2, Ofv. Finska Forh. xlv, No. 14.
- C. dohertyi*, Tenasserim, DISTANT, p. 452, Faun. Brit. India Rhynchota ii, **n. sp.**
- Camponotidea saundersi* var., REUTER, p. 4, Ofv. Finska Forh. xlv, No. 14.
- Camptobrochis tibialis*, Erythrea, REUTER, p. 12, op. cit. xlv, No. 6; *C. oculatus*, Congo, REUTER, p. 3, op. cit. xlv, No. 10; *C. esau*, p. 201, *capensis*, p. 202, S. Africa, DISTANT, Ann. Nat. Hist. xiii; *C. orientalis*, p. 460, *lutulentus*, *uniformis*, *similis*, p. 461, Brit. India, DISTANT, Faun. Brit. India Rhynchota ii; *C. signatus*, N. Queensland, DISTANT, p. 274, Ann. Nat. Hist. xiii; *C. brevis*, New Mexico, UHLER, p. 359, P. U. S. Mus. xxvii : **n. spp.**
- Campylognathus fulvus*, Crete, REUTER, p. 18, Ofv. Finska Forh. p. 18, **n. sp.**
- Campylotropis* **n. g.** near *Cyllocoris*, p. 35, for *C. jakolevi* **n. sp.**, Corea, p. 36, REUTER, Rev. Russe Ent. iv.
- Capellanus* **n. g.** *Phytocoraria* Walk., for *Lygus sparsus* Dist., DISTANT, p. 109, Ann. Nat. Hist. xiii.
- Capsus croesus*, *remus*, p. 468, *darsius*, Burma, *pegasus*, Ceylon, p. 469, DISTANT, Faun. Brit. India Rhynchota ii, **n. spp.**
- Chamus* **n. g.** *Cylaparia* for *C. wealei*, Cape Colony, **n. sp.**, DISTANT, p. 197, Ann. Nat. Hist. xiii.
- Charagochilus nigricornis*, Congo, REUTER, p. 2, Ofv. Finska Forh. xlv, No. 10; *C. duplicatus*, Pekin, REUTER, p. 16, op. cit. xlv, No. 16 : **n. spp.**
- Charitocoris* **n. g.** near *Calocoris*, p. 10, *C. pallidus* **n. sp.**, Persia, p. 11, REUTER, Annuaire Mus. St. Petersb. ix.
- Chlorosomella* **n. g.** near *Actorrhinus*, p. 6, *geniculata* **n. sp.**, Congo, p. 7, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Clapmarius* **n. g.** *Herdoniaria*, p. 419, *C. turgidus* **n. sp.**, Ceylon, p. 420, DISTANT, Faun. Brit. India Rhynchota ii.
- Clivinema rubida*, New Mexico, UHLER, p. 355, P. U. S. Mus. xxvii, **n. sp.**
- Combalus* **n. g.** *Miraria*, *C. novitius* **n. sp.**, Assam, DISTANT, p. 431, Faun. Brit. India Rhynchota ii.

- Cyphodema* ? *junodi*, Transvaal, DISTANT, p. 201, Ann. Nat. Hist. xiii, **n. sp.**
Cyphodemidea **n. g.** near *Cyphodema*, p. 17, *C. variegata* **n. sp.**, Mou-Pin, pl. ii, fig. 5, p. 19, REUTER, Ofv. Finska Forh. xlv, No. 16.
Cytorrhinus chinensis Stål, REUTER, p. 22, t. c.
Dagbertus **n. g.** near *Episcopus* for *Capsus darwini* etc., DISTANT, p. 203, Ann. Nat. Hist. xiii.
Deræocorsis rutilus var. **n. fasciata**, *D. scutellaris* var. **n. ventralis**, REUTER, p. 5, Ofv. Finska Forh. xlv, No. 14.
D. variabilis, *rufus*, *ornandus*, India, DISTANT, p. 467, Faun. Brit. India Rhynchota ii, **n. spp.**
Dichrooscytus consobrinus, Turkestan, HORVÁTH, p. 583, Ann. Mus. Hungar. ii ; *D. elegans*, New Mexico, UHLER, p. 356, P. U. S. Mus. xxvii : **n. spp.**
Diognetus **n. g.** *Miraria*, p. 431, *D. intonsus* **n. sp.**, Ceylon, p. 432, DISTANT, Faun. Brit. India Rhynchota ii.
Disphinctus elegans, Tenasserim, DISTANT, p. 445, t. c. **n. sp.**
Estuidus **n. g.** near *Malalasta*, p. 272, for *E. foveatus*, *marginatus* **n. spp.**, N. Queensland, p. 273, DISTANT, Ann. Nat. Hist. xiii.
Eucercoris suspectus, N. Queensland, DISTANT, p. 271, t. c. **n. sp.**
Eucyrtus parvulus, Djibouti, REUTER, p. 5, pl. i, fig. 2, Ofv. Finska Forh. xlv, No. 6, **n. sp.**
Felisacus **n. n.** for *Liocoris* Motsch. p. 438, *F. magnificus* **n. sp.**, Tenasserim, p. 439, DISTANT, Faun. Brit. India Rhynchota ii.
Fingulus **n. g.** near *Physetonotus*, for *F. atrocæruleus* **n. sp.**, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, p. 275.
Fulgentius **n. g.** *Herdonaria*, p. 103, for *F. mandarinus* **n. sp.**, China, p. 104, DISTANT, t. c.
Gallobelicus **n. g.** *Cyllocoraria*, p. 477, *G. crassicornis* **n. sp.**, India, p. 478, DISTANT, Faun. Brit. India Rhynchota ii.
Gismunda **n. g.** near *Liocoris*, *G. chelonina* **n. sp.**, Sikhim, DISTANT, p. 463, t. c.
Glaphyrocoris **n. g.** near *Læmocoris*, p. 15, *G. unifasciatus* **n. sp.**, Djibouti, pl. i, fig. 4, p. 16, REUTER, Ofv. Finska Forh. xlv, No. 6.
Globiceps parvulus, Spain, REUTER, p. 51, Ent. Mag. xl, **n. sp.**
Glossopeltis **n. g.** near *Pilophorus*, p. 13, *G. coutierei*, Obock, **n. sp.**, pl. i, fig. 3, p. 14, REUTER, Ofv. Finska Forh. xlv, No. 6.
Guisardus **n. g.** *Cylaparia*, *G. pellucidus* **n. sp.**, Tenasserim, DISTANT, p. 436, Faun. Brit. India Rhynchota ii.
Halticus intermedius, New Mexico, UHLER, p. 360, P. U. S. Mus. xxvii ; *H. chrysolepis*, Honolulu, KIRKALDY, p. 179, Entomologist 1904 : **n. spp.**
Harpedona **n. g.** *Herdonaria*, p. 418, *H. marginata* **n. sp.**, Ceylon, p. 419, DISTANT, Faun. Brit. India Rhynchota ii.
Helopeltis oryx, Ceylon, DISTANT, p. 441, t. c. **n. sp.**
Hermotinus **n. g.** near *Camptobrochis*, *H. signatus* **n. sp.**, Tenasserim, DISTANT, p. 462, t. c.
Hilia **n. g.** near *Halticus*, *H. fracta* **n. sp.**, Ceylon, DISTANT, p. 480, t. c.
Horcias lacteiclaeus, *albiventris*, *signatus*, S. America, DISTANT, p. 200, Ann. Nat. Hist. xiii, **n. spp.**
Hyalopeplus spinosus, Assam, DISTANT, p. 447, Faun. Brit. India Rhynchota ii, **n. sp.**
Isometopus feanus, Burma, DISTANT, p. 484, t. c. **n. sp.**
Læmocoris zarudnyi, Persia, REUTER, p. 11, Annuaire Mus. St. Petersb. ix, **n. sp.**
Liocoridia **n. g.** near *Lygus*, p. 13, *mutabilis* **n. sp.**, Mou-Pin, pl. ii, fig. 4, p. 14, REUTER, Ofv. Finska Forh. xlv, No. 16.
Liocoris myitta, *formosus*, Tenasserim, DISTANT, p. 464, Faun. Brit. India Rhynchota ii, **n. spp.**

- Lopus bimaculatus* Jak., description, REUTER, p. 1, Ofv. Finska Forh. xlv, No. 14; *L. australis* Walk., referred to *Pantilius* and described, DISTANT, p. 106, Ann. Nat. Hist. xiii.
- Lucitanus* n. g. for *Leptomerocoris punctatus* Kirby, DISTANT, p. 465, Faun. Brit. India Rhynchota ii.
- Lygus australis* n. n. for *innotatus* Walk., p. 110, *æthiops* n. n. for *limbatus* Walk., p. 111, DISTANT, Ann. Nat. Hist. xiii.
- L. abessinicus*, Kupi, p. 7, *vittatus*, Djibouti, p. 8, *perversus*, Scioa, p. 10, *simonyi*, Aden, p. 11, REUTER, Ofv. Finska Forh. xlv, No. 6; *L. schonlandi*, Cape Colony, DISTANT, p. 199, Ann. Nat. Hist. xiii; *L. albescens*, *decoloratus*, p. 455, *pubens*, *immitis*, p. 456, *catullus*, p. 457, India and Ceylon, DISTANT, Faun. Brit. India Rhynchota ii; *L. flavoscutellatus*, N. Queensland, DISTANT, p. 273, Ann. Nat. Hist. xiii : n. spp.
- Malalasta* n. g. *Capsina*, *M. superba* n. sp., Tenasserim, DISTANT, p. 446, Faun. Brit. India Rhynchota ii.
- Malthacosoma adpersum*, Transcaspiian, REUTER, p. 11, Ofv. Finska Forh. xlv, No. 14, n. sp.
- Matenesius* n. g. *Miraria*, p. 425, *M. marginatus* n. sp., Ceylon, p. 426, DISTANT, Faun. Brit. India Rhynchota ii.
- Mauroidactylus albidus* var. n. *pallidicornis*, HORVÁTH, p. 585, Ann. Mus. Hungar. ii.
- Megacalum elongatum* to *Pantiliodes*, REUTER, p. 3, Ofv. Finska Forh. xlv, No. 6.
- M. persimile*, Abyssinia, REUTER, p. 4, t. c.; *M. transvaalensis*, Pretoria, DISTANT, p. 196, Ann. Nat. Hist. xiii; *M. relatum*, p. 428, *rubricatum*, Ceylon, *hampsoni*, Nilgiri Hills, p. 429, *picturatum*, Burma, p. 430, DISTANT, Faun. Brit. India Rhynchota ii; *M. modestum*, *townsvillensis*, *suffusum*, N. Queensland, DISTANT, Ann. Nat. Hist. xiii : n. spp.
- Megaloceræa celestialium* to *Trigonotylus*, REUTER, p. 1, Ofv. Finska Forh. xlv, No. 16.
- M. graminea*, *antennata*, p. 424, *elongata*, *dohertyi*, p. 425, India and Ceylon, DISTANT, Faun. Brit. India Rhynchota ii; *M. doddi*, N. Queensland, DISTANT, p. 269, Ann. Nat. Hist. xiii : n. spp.
- Megalocolæus albidus*, Transcaspiian, REUTER, p. 9, Ofv. Finska Forh. xlv, No. 4, n. sp.
- Mertila* n. g. *Bryocoraria* for *M. malayensis*, Singapore, *ternatensis*, Ternate, n. spp., DISTANT, p. 113, Ann. Nat. Hist. xiii.
- Mevius* n. g. *M. lewisi* n. sp., Ceylon, DISTANT, p. 453, Faun. Brit. India Rhynchota ii.
- Miris*, the name applied to *Leptopterna* Fieb., REUTER, p. 2, Ofv. Finska Forh. xlv, No. 15.
- M. ruficeps*, Cape Colony, DISTANT, p. 105, Ann. Nat. Hist. xiii; *M. atkinsoni*, Nilgiri Hills, DISTANT, p. 423, Faun. Brit. India Rhynchota ii : n. spp.
- Mycterocoris* n. g. for *Deræocoris cerachates*, UHLER, p. 358, P. U. S. Mus. xxvii.
- Myrmecophyes korschinski*, p. 4, *æneus*, p. 5, Turkestan, REUTER, Ofv. Finska Forh. xlv, No. 4, n. spp.
- Mystilus* n. g. *Herdoniaria*, *M. priamus* n. sp., Tenasserim, DISTANT, p. 420, Faun. Brit. India Rhynchota ii.
- Nanniella* n. g. *Laboparia*, *N. chalybea* n. sp., Congo, p. 6, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Nichomachus* n. g. *Herdoniaria* for *N. sloggetti* n. sp., Cape Colony, DISTANT, p. 104, Ann. Nat. Hist. xiii.
- Nicostratus* n. g. *Cyllocoraria*, *N. balteatus* n. sp., Ceylon, DISTANT, p. 475, Faun. Brit. India Rhynchota ii.
- Nyctidea* n. g. near *Criocoris*, p. 15, *moesta*, E. Siberia, n. sp., p. 17, REUTER, Ofv. Finska Forh. xlv, No. 4.

- Nymannus* **n. g.** *Miraria* for *N. typicus* **n. sp.**, Cape Colony, DISTANT, p. 195, Ann. Nat. Hist. xiii.
- Oncotylus cunealis*, Persia, REUTER, p. 14, Annuaire Mus. St. Petersb. ix ; *O. fuscicornis*, Mongolia, REUTER, p. 10, Ofv. Finska Forh. xlv, No. 14 : **n. spp.**
- Onomatus* **n. g.** *Herdonaria*, *O. pompeus* **n. sp.**, Assam, DISTANT, p. 416, Faun. Brit. India Rhynchota ii.
- Orthotylus antennalis*, Orotava, p. 6, *pallidulus*, Austria, p. 7, REUTER, Ofv. Finska Forh. xlv, No. 14, **n. spp.**
- Pantilius gonoceroides*, Mou-Pin, REUTER, p. 4, op. cit. xlv, No. 16, **n. sp.**
- Paracalocoris capensis*, Cape Good Hope, DISTANT, p. 110, Ann. Nat. Hist. xiii ; *P. barretti*, Cape Colony, DISTANT, p. 199, t. c. ; *P. burmanicus*, *erebus*, Burma, *lanarius*, Ceylon, DISTANT, p. 450, Faun. Brit. India Rhynchota ii : **n. spp.**
- Paracarus grenadensis* (= *mexicanus* Uhler), Grenada, DISTANT, p. 62, Ann. Nat. Hist. xiv, **n. sp.**
- Parapantilius* **n. g.** p. 5, *P. thibetanus* **n. sp.**, pl. ii, fig. 2, p. 6, Mou-Pin, REUTER, Ofv. Finska Forh. xlv, No. 16.
- Pharyllus* **n. g.** for *Leptomerocoris pistacinus* Motsch., DISTANT, p. 434, Faun. Brit. India Rhynchota ii.
- Phytocoris zarudnyi*, p. 8, *lineaticollis*, p. 9, Persia, REUTER, Annuaire Mus. St. Petersb. ix ; *P. longicornis*, p. 1, *maestus*, p. 2, Centr. Asia, REUTER, Ofv. Finska Forh. xlv, No. 16 ; *P. crinitus*, Ceylon, DISTANT, p. 449, Faun. Brit. India Rhynchota ii : **n. spp.**
- Plagiognathus cinerascens*, Mongolia, REUTER, p. 17, Ofv. Finska Forh. xlv, No. 14, **n. sp.**
- Pleuroxonotus* **n. g.** p. 7, *nasutus* **n. sp.**, Transcaspian, p. 8, REUTER, t. c., No. 4.
- Peciloscytus cuneatus* Dist. (as *Lygus*)=(*obscurus* Uhler), DISTANT, p. 62, Ann. Nat. Hist. xiv.
- P. consanguineus*, *pygmaeus*, *capitatus*, Burma and Ceylon, DISTANT, p. 459, Faun. Brit. India Rhynchota ii ; *P. antennatus*, *flavipes*, N. Queensland, DISTANT, p. 274, Ann. Nat. Hist. xiii : **n. spp.**
- Polymerus varicornis*, Corea, JAKOVLEV, p. 94, Rev. Russe Ent. iv, **n. sp.**
- Prodromus* **n. g.** *Cylaparia*, p. 436, *P. subflavus*, Ceylon, *clypeatus*, *subviridis*, Tenasserim, p. 437, DISTANT, Faun. Brit. India Rhynchota ii.
- Psallopsis*, amended description, REUTER, p. 15, Annuaire Mus. St. Petersb. ix.
- P. basalis*, Persia, id. p. 16, t. c. **n. sp.**
- Psallus proteus* varr., REUTER, pp. 12, 13, Ofv. Finska Forh. xlv, No. 14.
- P. instabilis*, p. 13, *beckeri*, p. 14, *longiceps*, p. 15, Canaries, REUTER, t. c. ; *P. singalensis*, Ceylon, DISTANT, p. 482, Faun. Brit. India Rhynchota ii : **n. spp.**
- Rhinofulvius*, characters, p. 1, *R. albifrons*, pl. i, fig. 1, p. 2, REUTER, Ofv. Finska Forh. xlv, No. 6.
- Ropaliceschatus* **n. g.** near *Pachypeltis*, p. 1, *R. quadrimaculatus* **n. sp.**, Mou-Pin, pl. ii, fig. 1, p. 3, REUTER, op. cit. No. 16.
- Sabellius* **n. g.** near *Dereocoris* for *Capsus apicifer*, and *Lopus sordidus* Walk., DISTANT, p. 114, Ann. Nat. Hist. xiii.
- Scirtetellus seminitens*, Turkestan, HORVÁTH, p. 584, Ann. Mus. Hungar. ii, **n. sp.**
- Sophianus* **n. g.** *Isometopinae*, p. 485, *S. alces* **n. sp.**, Ceylon, p. 486, DISTANT, Faun. Brit. India Rhynchota ii.
- Stenodema*, synopsis of Palearctic, REUTER, Ofv. Finska Forh. xlv, No. 15, pp. 3-6.
- S. trispinosum*, Siberia, p. 8, *turanicum*, Transcaspian, p. 11, *alpestre*, p. 13, *elegans*, p. 14, *plebeium*, p. 17, *chinense*, p. 19, Setschuan, REUTER, t. c. **n. spp.**

- Tancredus* **n. g.** *Miraria*, *T. sandaracatus* **n. sp.**, Ceylon, DISTANT, p. 430, Faun. Brit. India Rhynchota ii.
- Tenthecoris bicolor*, characters, DISTANT, p. 202, Ann. Nat. Hist. xiii.
- Trachelonotus* **n. g.** near *Læmocoris*, p. 12, *T. unifasciatus* **n. sp.**, Persia, p. 13, REUTER, Annuaire Mus. St. Petersb. ix.
- Trichobasis* **n. g.** near *Pantiliodes*, p. 1, *setosa* **n. sp.**, Congo, p. 2, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Trigonotylus brevipes*, characters, REUTER, p. 5, Annuaire Mus. St. Petersb. ix.
- Turnebus* **n. g.** near *Isometopus*, *T. cuneatus* **n. sp.**, Ceylon, DISTANT, p. 485, Faun. Brit. India Rhynchota ii.
- Tylopeltis* **n. g.** near *Glossopeltis*, p. 4, *albosignata* **n. sp.**, Congo, p. 5, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Tyraquellus* **n. g.** for *Leptomerochis albofasciatus* Motsch. and *T. maculatus* **n. sp.**, Ceylon, DISTANT, p. 471, Faun. Brit. India Rhynchota ii.
- Volkelius* **n. g.** near *Sahlbergella* for *V. sulcatus* **n. sp.**, N. Queensland, DISTANT, p. 271, Ann. Nat. Hist. xiii.
- Zanchius* **n. g.** *Cyllocoraria*, *Z. annulatus* **n. sp.**, Ceylon, DISTANT, p. 477, Faun. Brit. India Rhynchota ii.
- Zanessa sanguinolenta*, Nilgiri Hills, DISTANT, p. 432, t. c. **n. sp.**

SALDIDÆ.

- Leotichius* **n. g.** *Leptopinae*, p. 406, *L. glaucopis* **n. sp.**, Burma, p. 407, DISTANT, Faun. Brit. India Rhynchota ii.
- Salda jakowleffi* var. **n. mærens**, HORVÁTH, p. 585, Ann. Mus. Hungar. ii.
- S. dizoni*, India, DISTANT, p. 405, Faun. Brit. India Rhynchota ii, **n. sp.**
- Valleriola* **n. g.** p. 405, *V. greeni* **n. sp.**, Ceylon, p. 406, DISTANT, t. c.

HYDROCORISÆ.

[Cf. DISTANT (386, 391), HORVÁTH (717, 718), KIRKALDY (813).]

- Anatomy of *Ranatra*, breathing organs etc., MARSHALL & SEVERIN, Tr. Wisconsin Ac. xiv, pp. 487–501, pls. xxxiv–xxxvi.
- Annotated catalogue of *Notonectidæ*, KIRKALDY, pp. 93–135, Wien. ent. Zeit. xxiii.
- Anisops doris*, p. 112, *stali*, p. 113, *endymion*, p. 114, Australia, *bouvieri*, Cochín China, p. 116, KIRKALDY, t. c. **n. spp.**
- Buenoa* **n. g.** type *Anisops antigone* Kirk., p. 120, *B. ida*, Uruguay, p. 121, *salutis*, Brit. Guiana, p. 122, **n. spp.**, KIRKALDY, t. c.
- Cercotmetus fumosus*, Ceylon, DISTANT, p. 278, Entomologist 1904, **n. sp.**
- Corixa acromelana*, Turkestan, HORVÁTH, p. 585, Ann. Mus. Hungar. ii, **n. sp.**
- Helotrephes bouvieri*, Celebes, p. 129, *martini*, Sumatra, p. 130, KIRKALDY, Wien. ent. Zeit. xxiii, **n. spp.**
- Laccotrephes flavovenosa* Dohrn (as *Nepa*)=(*japonensis* Scott), DISTANT, p. 63, Ann. Nat. Hist. xiv.
- L. calcar*, Nigeria, *nyasæ*, Nyika Mts., DISTANT, p. 64, t. c. **n. spp.**
- Macrocoris transvaalensis*, Lydenburg, DISTANT, p. 258, Entomologist 1904, **n. sp.**
- Micronecta haliploides*, Colombo, p. 594, *carbonaria*, New Guinea, p. 595, HORVÁTH, Ann. Mus. Hungar. ii, **n. spp.**
- Mononyx luteovarius*, Queensland, DISTANT, p. 63, Ann. Nat. Hist. xiv, **n. sp.**
- Nepa cinerea*, salivary glands, BORDAS, C.R. Soc. Biol. lvii, pp. 667–669.
- Plea japonica*, Akashi, HORVÁTH, p. 594, Ann. Mus. Hungar. ii; *P. buenoi*, Pondicherry, KIRKALDY, p. 128, Wien. ent. Zeit. xxiii : **n. spp.**

- Ranatra sordidula* = (*unicolor* Scott), DISTANT, p. 66, Ann. Nat. Hist. xiv.
R. fuscoannulata, Ruwenzori, p. 64, *cinnamomea*, *varicolor*, *natalensis*,
 p. 65, S. Africa, DISTANT, t. c. **n. spp.**
Thurselinus **n. g.** near *Macrocoris*, *T. greeni* **n. sp.**, Ceylon, DISTANT,
 p. 259, Entomologist 1904.

HOMOPTERA.

Catalogue of *Homoptera* (except *Aphid. Coccid.*) of Germany, HUEBER,
 Jahresh. Ver. Wurttemb. lx, pp. 253-277.

CICADIDÆ.

[Cf. DISTANT (384, 393), GODING & FROGGATT (613), JACOBI (733, 736),
 MATSUMURA (922), MELICHAR (937), NOUALHIER (984), RAINBOW
 (1118).]

DISTANT (393) commences a revision of *Cicadidæ*, preliminary to a
 synonymic catalogue.

The Palearctic *Cicadidæ* (in Moravian), MELICHAR, Vestnik. Klub. Proste-
 jove iv, pp. 12-26.

Monograph of Australian *Cicadidæ*, 119 species, GODING & FROGGATT,
 P. Linn. Soc. N. S. Wales xxix, pp. 561-669, 2 pls.

Copula between *Cyclochila* and *Thopha*, RAINBOW, Rec. Austral. Mus. v,
 p. 116.

Angamiana floridula, Tonkin, DISTANT, p. 299, Ann. Nat. Hist. xiv, **n. sp.**

Antankaria **n. g.** type *C. madagascariensis* Dist., DISTANT, p. 429, t. c.

Arunta **n. g.** type *C. perulata* Guér., DISTANT, p. 302, t. c.

Cacama **n. g.** type *Proarna maura* Dist., DISTANT, p. 429, t. c.

Cicada vesta, Bombay, pl. xxx, fig. 4, *nigrans*, Madagascar, fig. 1, DISTANT,
 p. 673, Tr. ent. Soc. London 1904; *C. pyropa*, Japan, MATSUMURA,
 p. 53, pl. iii, fig. 4, Annot. zool. Japon. v; *C. andrewsi*, Japan, *umbrosa*,
 Borneo, p. 330, *boliviana*, Chimali [cf. *Oria* below], p. 331, DISTANT,
 Ann. Nat. Hist. xiv; *C. graminea*, Queensland, DISTANT, p. 428, t. c.;
C. hieroglyphica, p. 581, *sylvanella*, p. 582, Australia, GODING &
 FROGGATT, P. Linn. Soc. N. S. Wales xxix : **n. spp.**

Cicadetta montana, in Germany, pp. 283-285, Jahresh. Ver. Wurttemb. lx.

Cosmopsaltria khadiga, Pahang, DISTANT, p. 671, pl. xxx, fig. 9, Tr. ent.
 Soc. London 1904, **n. sp.**

Cryptotympana holsti, Formosa, DISTANT, p. 331, Ann. Nat. Hist. xiv; *C.*
varicolor, Sumbawa, DISTANT, p. 430, t. c. : **n. spp.**

Cystopsaltria **n. g.** *C. immaculata* **n. sp.**, Queensland, GODING & FROGGATT,
 p. 661, P. Linn. Soc. N. S. Wales xxix.

Dundubia spiculata, Cambodia; NOUALHIER, p. 178, pl. xi, figg. 3, 4,
 Mission Pavie iii, **n. sp.**

Fidicina vitellina, p. 155, *parvula*, p. 157, Brazil, JACOBI, SB. Ges. naturf.
 Berlin 1904, **n. spp.**

Gæana pariei, Tonkin, NOUALHIER, p. 179, pl. xi, fig. 5, Mission Pavie iii,
n. sp.

Glaucopsaltria **n. g.** p. 657, *G. viridis* **n. sp.**, Queensland, p. 658, GODING
 & FROGGATT, P. Linn. Soc. N. S. Wales xxix.

Hamza **n. g.** for *Platypleura bouruensis*, DISTANT, p. 674, pl. xxx, fig. 5, Tr.
 ent. Soc. London 1904.

Henicopsaltria pygmæa, S.W. Australia, DISTANT, p. 303, Ann. Nat. Hist.
 xiv, **n. sp.**

Ioba **n. g.** type *P. leopardina* Dist., DISTANT, p. 295, t. c.

Kanakia congrua, Queensland, GODING & FROGGATT, P. Linn. Soc. N. S.
 Wales xxix, **n. sp.**

- Koma* **n. g.** type *P. bombifrons* Karsch, DISTANT, p. 296, Ann. Nat. Hist. xiv.
- Kongota* **n. g.** type *P. punctigera* Walk., DISTANT, p. 298, t. c.
- Lacetas annulicornis* Karsch, pl. xlv, fig. 4, p. 769, JACOBI, Zool. Jahrb. Syst. xix.
- Macrotristria nigrovenosa*, N. Queensland, DISTANT, p. 329, Ann. Nat. Hist. xiv; *M. nigrosignata*, W. Australia, pl. xxix, fig. 7, p. 673, DISTANT, Tr. ent. Soc. London 1904 : **n. spp.**
- Melampsalta spinosa*, p. 635, *kershawi*, p. 636, *castanea*, p. 637, *rubristrigata*, *atrata*, p. 638, *fletcheri*, p. 640, *infusca*, *flava*, p. 641, *binotata*, p. 643, *rubricincta*, p. 644, *nebulosa*, *spreti*, p. 647, *fulva*, p. 648, *rubea*, p. 651, *graminis*, p. 652, *tristrigata*, p. 653, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Muansa* **n. g.** type *P. clypealis* Karsch, DISTANT, p. 295, Ann. Nat. Hist. xiv.
- Munza* **n. g.** type *P. laticlavata* Stål, DISTANT, p. 297, t. c.
- Oria* **n. g.** type *Cicada boliviana* Dist., DISTANT, p. 429, t. c.
- Parnisa hæmorrhagica*, Brazil, JACOBI, p. 159, SB. Ges. naturf. Berlin 1904, **n. sp.**
- Pauropsalta* **n. g.** p. 615, *P. leurensis*, p. 616, pl. xviii, fig. 8, *castanea*, p. 617, *prolongata*, *extensa*, p. 618, *nigristriga*, p. 619, *annulata*, p. 620, *nodicosta*, *dubia*, p. 621, *rubra*, p. 623, *basalis*, p. 625, *emma*, p. 626, *borealis*, p. 627, *minima*, p. 628, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Platypleura antinorii*, p. 765, cut, JACOBI, Zool. Jahrb. Syst. xix.
- P. laticollis*, E. Africa, MELICHAR, p. 25, Verh. Ges. Wien liv; *P. longula*, Delagoa Bay, p. 332, *mira*, Laos, p. 333, *melania*, *bettoni*, Africa, p. 334, DISTANT, Ann. Nat. Hist. xiv; *P. veligera*, pl. xlv, fig. 1, p. 766, *vitticollis*, fig. 2, p. 767, N.E. Africa, JACOBI, Zool. Jahrb. Syst. xix; *P. mackinnoni*, Mussooree, p. 667, pl. xxix, fig. 1, *makaga*, fig. 4, *adouma*, fig. 2, Congo, p. 668, DISTANT, Tr. ent. Soc. London 1904; *P. arminops*, Siam, NOUALHIER, p. 178, pl. xi, figg. 1, 2, Mission Pavie iii; *P. tepperi*, Australia, GODING & FROGGATT, p. 568, pl. xviii, fig. 5, P. Linn. Soc. N. S. Wales xxx : **n. spp.**
- Pomponia surya*, pl. xxx, fig. 2, p. 671, *melanoptera*, fig. 3, p. 672, Mussooree, DISTANT, Tr. ent. Soc. London 1904, **n. spp.**
- Psaltoda plebeia*, N. S. Wales, GODING & FROGGATT, p. 589, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Pycna numa*, Mashonaland, pl. xxix, fig. 3, *hecuba*, E. Africa, fig. 6, DISTANT, p. 670, Tr. ent. Soc. London 1904; *P. celestia*, W. China, DISTANT, Ann. Nat. Hist. xiv : **n. spp.**
- Rihana* **n. g.** type *Fidicina ochracea* Walk., *R. virgulata*, Mexico, p. 426, *swalei*, hab. ? p. 427, **n. spp.**, DISTANT, t. c.
- Sadaka* **n. g.** type *P. virescens* Karsch, DISTANT, p. 296, t. c.
- Terpnosia ganesa*, India, p. 675, pl. xxx, fig. 6, *abdullah*, Pahang, p. 676, fig. 7, DISTANT, Tr. ent. Soc. 1904, **n. spp.**
- Tettigia variegata*, Townsville, GODING & FROGGATT, p. 594, pl. xviii, fig. 9, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Tibicen sankara*, India, DISTANT, p. 675, pl. xxx, fig. 8, Tr. ent. Soc. London 1904; *T. ruber*, p. 600, *doddi*, p. 602, *rubricinctus*, p. 603, *borealis*, p. 604, *kuranda*, p. 605, *hirsutus*, p. 607, *occidentalis*, p. 608, *flavus*, p. 610, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Tosena seebohmi*, Formosa, DISTANT, Ann. Nat. Hist. xiv, **n. sp.**
- Trismarcha exsul*, N. E. Africa, JACOBI, p. 768, pl. xlv, fig. 3, Zool. Jahrb. Syst. xix, **n. sp.**
- Ugada* **n. g.** type *Tettig. limbata* Fabr., DISTANT, p. 299, Ann. Nat. Hist. xiv.

- U. n. g.* for *Platypleura præcellens*, DISTANT, the insect figured, pl. xxix, fig. 9, p. 669, id. Tr. ent. Soc. London 1904.
U. nutti, Tanganyika, DISTANT, p. 336, Ann. Nat. Hist. xiv, **n. sp.**
Umjaba n. g. type *P. evanescens* Butl., DISTANT, p. 298, t. c.
Venustria n. g. Tibeceniæ, p. 595, *V. superba n. sp.*, Queensland, p. 597, pl. xix, fig. 7, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix.
Xosopsaltria n. n. for *Pydna*, KIRKALDY, p. 280, Entomologist 1904.
Yanga n. g. type *P. hova* Dist., DISTANT, p. 297, Ann. Nat. Hist. xiv.

FULGORIDÆ.

[Cf. FOWLER (614), HORVÁTH (716, 717), JACOBI (734, 736), KIRKALDY (809), MELICHAR (937, 938), NOUALHIER (984).]

Catalogue of *Fulgoridæ* of N. America, SWEZEY (1360).

Kareol n. n. for *Anagnia*, *Colgorma n. n.* for *Temora*, *Proutista n. n.* for *Assamia*, *Xosophara n. n.* for *Rhinortha*, *Southia n. n.* for *Paulia*, *Florichisme n. n.* for *Pæcilstola*, *Micromasoria n. n.* for *Cona*, *Bergias n. n.* for *Bergia*, *Hesperophantia n. n.* for *Carthæa*, *Thanatophantia n. n.* for *Alisca*, *Gelastophantia n. n.* for *Cyarda*, *Xosias n. n.* for *Eteocles*, *Amfortas n. n.* for *Gastrinia*, *Gelastyra n. n.* for *Cibyra*, *Thanatophara n. n.* for *Colonia*, KIRKALDY, pp. 279, 280, Entomologist 1904.

Acmonia gerstæckeri, Brazil, JACOBI, p. 160, SB. Ges. naturf. Berlin 1904, **n. sp.**

Acrobelus delphinus, Tonkin, NOUALHIER, p. 182, pl. x, fig. 10, Mission Pavie iii, **n. sp.**

Aloha n. g. near *Megamelus*, *A. ipomeæ n. sp.*, Oahu, KIRKALDY, p. 177, Entomologist 1904.

Amphiscepa calida, pl. xii, fig. 8, p. 118, *A. subpellucida*, fig. 9, p. 119, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.

Anotia smithi, pl. ix, fig. 3, *marginicornis*, fig. 4, *pellucida*, p. 77, *ruficollis*, fig. 5, *venustula*, fig. 6, *tenella*, fig. 7, p. 78, *invalida*, fig. 8, p. 79, Central America, FOWLER, t. c. **n. spp.**

Bothriocera tinealis, pl. ix, figg. 11, 12, *signoreti*, fig. 13, FOWLER, t. c.

B. venosa, pl. ix, fig. 14, *excelsa*, fig. 15, *pellucida*, fig. 16, p. 83, *albidipennis*, figg. 17, 18, *nigra*, fig. 19, p. 84, Central America, FOWLER, t. c. **n. spp.**

Bothriocerodes n. g. p. 84, *B. variegatus*, pl. ix, fig. 20, *castaneus*, fig. 21, *metallicus*, fig. 22, **n. spp.**, Central America, p. 85, FOWLER, t. c.

Caliscelis, table of palaearctic, HORVÁTH, pp. 378–380, Ann. Mus. Hungar. ii.

C. maroccana, Tangier, p. 381, *bolivari*, Madrid, p. 382, *peculiaris*, Asia Minor, p. 384, id. t. c. **n. spp.**

Cedusa n. g. near *Plectoderes*, *C. funesta*, pl. xi, fig. 28, *venosa*, fig. 29, **n. spp.**, Mexico, FOWLER, p. 112, Biol. Centr.-Amer. Rhynchot. Homopt. i.

Cixius montanus, pl. x, fig. 25, *comptus*, fig. 26, p. 96, *flavobrunneus*, fig. 27, *apicatus*, fig. 28, p. 97, Central America, FOWLER, t. c. **n. spp.**

Cyclumna n. g. Issida, *C. subrotundata*, pl. xii, fig. 5, **n. sp.**, Mexico, FOWLER, p. 116, t. c.

Cyrene obtusata, Bangkok, NOUALHIER, p. 182, pl. x, fig. 9, Mission Pavie iii, **n. sp.**

Delphax conspicua, Turkestan, HORVÁTH, p. 589, Ann. Mus. Hungar. ii, **n. sp.**

Dendrophora breviceps, E. Africa, MELICHAR, p. 30, Verh. Ges. Wien liv, **n. sp.**

Dictyophara ogadensis, p. 38, *ufudensis*, p. 29, E. Africa, MELICHAR, t. c. ;

- D. sertata*, p. 162, *multireticulata*, p. 163, Brazil, JACOBI, SB. Ges. naturf. Berlin 1904 : **n. spp.**
- Eparmene* **n. g.** *Cixiides*, *E. pulchella*, pl. xi, fig. 6, **n. sp.**, Panama, FOWLER, p. 101, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Fulgura monetaria*, Cambodia, NOUALHIER, p. 180, pl. x, fig. 3, Mission Pavie iii, **n. sp.**
- Grynia nigricoxis*, pl. xi, fig. 9, p. 193, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Haplaxius* **n. g.** near *Cixius*, p. 97, *H. lævis*, pl. x, figg. 29, 30, *frontalis*, fig. 31, p. 98, **n. spp.**, Mexico, FOWLER, t. c.
- Helicopter sobrina*, pl. xi, fig. 14, var. *albido-variegata*, fig. 15, p. 106, *chiriquensis*, fig. 16, *longiceps*, fig. 17, p. 107, Centr. America, id. t. c. **n. spp.**
- Hemispheerius interclusus*, Cambodia, NOUALHIER, p. 181, pl. x, fig. 4, Mission Pavie iii, **n. sp.**
- Hyphancylus* **n. g.** *Issida*, *H. falcatus*, pl. xii, fig. 6, *excelsus*, fig. 7, **n. spp.**, Mexico, FOWLER, p. 117, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Hysteropterum sierræ*, pl. xii, fig. 10, p. 119, *angulare*, fig. 11, *montanum*, fig. 12, p. 120, Mexico, FOWLER, t. c. **n. spp.**
- Liburnia campestris*, natural history, and parasite, SWEZEY, pp. 43-46, Bull. U. S. Dep. Agric. Ent. xlv.
- Megamelus leahi*, Oahu, KIRKALDY, p. 176, Entomologist 1904, **n. sp.**
- Metabrixia* **n. g.** *M. delicata*, pl. ix, fig. 23, p. 86, *aspera*, fig. 24, *germana*, fig. 25, p. 87, *tacta*, pl. x, fig. 1, *maculata*, fig. 2, p. 88, **n. spp.**, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Micraria* **n. g.** *Cixiides*, p. 100, *M. costalis*, pl. xi, fig. 5, **n. sp.**, Mexico, p. 101, FOWLER, t. c.
- Microleida* **n. g.** *Cixiides*, *M. asperata*, pl. xi, figg. 1, 2, **n. sp.**, Mexico, FOWLER, p. 99, t. c.
- Mnemosyne planiceps*, pl. xi, figg. 7, 8, p. 102, FOWLER, t. c.
- Œcleus, seminiger*, pl. x, fig. 3, p. 89, *decens*, figg. 6, 7, p. 90, FOWLER, t. c.
- Œ. tenellus*, pl. x, fig. 4, *teupæ*, fig. 5, p. 89, *pellucens*, figg. 8, 9, *minimus*, fig. 10, p. 90, *brunneus*, fig. 11, *concinus*, fig. 12, *addendus*, fig. 13, p. 91, Central America, FOWLER, t. c. **n. spp.**
- Oliarus hirtus, frontalis*, E. Africa, MELICHAR, p. 31, Verh. Ges. Wien liv ; *O. cucullatus*, p. 180, pl. xi, figg. 7 & 8, *petasatus*, figg. 9 & 10, p. 181, Cambodia, NOUALHIER, Mission Pavie iii ; *O. excelsus*, pl. x, fig. 14, *concinulus*, fig. 15, p. 92, *propior*, fig. 16, *lacteipennis*, fig. 17, p. 93, *humeralis*, fig. 18, *breviceps*, fig. 19, *chiriquensis*, fig. 20, p. 94, *insignior*, figg. 21, 22, *nigro-alutaceus*, figg. 23, 24, p. 95, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i : **n. spp.**
- Ornithissus* **n. g.** *Issida*, p. 121, *O. cockerelli*, pl. xii, fig. 14, **n. sp.**, Mexico, p. 122, FOWLER, t. c.
- Pachyntheisa* **n. g.** *Cixiides*, p. 99, *P. concinna*, pl. xi, fig. 3, *excelsior*, fig. 4, **n. spp.**, Mexico, p. 100, FOWLER, t. c.
- Parapioxys viridifasciatus, hilaris*, E. Africa, MELICHAR, p. 27, Verh. Ges. Wien liv, **n. spp.**
- Patara marmorata*, Guatemala, pl. ix, fig. 9, p. 79, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i, **n. sp.**
- Peregrinus* **n. g.** *Asiracinae*, p. 175, for *Delphax maidis* Ashm., KIRKALDY, Entomologist 1904.
- Perkinsiella saccharicida*, natural history, PERKINS, Rep. exp. Stat. Hawaii 1904, pp. 43-66.
- Phylloscelis atra*, macropterous form, OSBORN, p. 93, cuts, Ohio Natural. iv.
- Plectoderes championi*, pl. xi, fig. 19, p. 108, *basalis*, fig. 20, *excelsus*, fig. 21, *flavovittatus*, fig. 22, p. 109, *notatus*, fig. 23, *montanus*, fig. 24, *asper*, fig. 25, p. 110, *lineatocollis*, fig. 26, *fuscolineatus*, fig. 27, p. 111, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i, **n. spp.**

- Pochazoides asperatus*, E. Africa, MELICHAR, p. 33, Verh. Ges. Wien liv, **n. sp.**
Proteinissus n. g. Issidae, *P. bilimeki*, pl. xii, fig. 13, **n. sp.**, Mexico, FOWLER, p. 121, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Pseudohelicoptera n. g. p. 107, *P. nasuta*, **n. sp.**, Panama, pl. xi, fig. 18, p. 108, FOWLER, t. c.
Putala apicata, E. Africa, MELICHAR, p. 29, Verh. Ges. Wien liv, **n. sp.**
Rhamphixius n. g. Cixiides, *R. championi*, **n. sp.**, Central America, pl. ix, fig. 10, FOWLER, p. 81, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Rhinophantia fatua, E. Africa, MELICHAR, p. 33, Verh. Ges. Wien liv, **n. sp.**
Ricania erlangeri, E. Africa, MELICHAR, p. 32, t. c.; *R. flabellum*, Cambodia, NOUALHIER, p. 181, pl. xi, fig. 11, Mission Pavie iii : **n. spp.**
Rudia diluta, pl. xi, fig. 10, p. 104, *bicincta*, fig. 12, p. 105, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. ii.
R. proxima, pl. xi, fig. 11, p. 104, *verticalis*, fig. 13, p. 105, Central America, FOWLER, t. c. **n. spp.**
Seliza squamula, E. Africa, MELICHAR, p. 34, Verh. Ges. Wien liv, **n. sp.**
Thionia variegata, pl. xii, figg. 15, 16, p. 122, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
T. brevior, pl. xii, fig. 17, *scutellata*, fig. 18, p. 123, *sordida*, fig. 19, *humilis*, fig. 20, *naso*, fig. 21, p. 124, Mexico, FOWLER, t. c. **n. spp.**
Ulixes clypeatus, pl. xii, fig. 1, p. 114, FOWLER, t. c.
U. intermedius, Mexico, pl. xii, figg. 3, 4, p. 115, FOWLER, t. c. **n. sp.**

FLATIDES.

[Cf. JACOBI (734), SCHMIDT (1228, 1228).]

- Atracis dentata*, Benue, SCHMIDT, p. 376, Stettin Ent. Zeit. lxx, **n. sp.**
Bythopsyrna, analysis, p. 186, *B. ligata* ♂, p. 189, SCHMIDT, t. c.
B. dohrni, p. 188, *udei*, p. 189, *sumatrana*, p. 191, *violacea*, p. 209, Sumatra, SCHMIDT, t. c.; *B. rabbowi*, Java, SCHMIDT, p. 355, t. c. : **n. spp.**
Cerynia nigropustulata, Sumatra, SCHMIDT, t. c. **n. sp.**
Copsyrna alma, Sumatra, SCHMIDT, p. 185, t. c. **n. sp.**
Dascalina punctata, Pará, p. 373, *unimaculata*, Ecuador, p. 374, SCHMIDT, t. c. **n. spp.**
Doria haenschii, p. 356, *ecuadoriana*, p. 357, Ecuador, SCHMIDT, t. c. **n. spp.**
Euphanta luridicosta, p. 359, *rubromarginata*, p. 360, Queensland, SCHMIDT, t. c. **n. spp.**
Flata ferruginea, Borneo, SCHMIDT, p. 354 and var. *æruginea*, p. 355, t. c. **n. sp.**
Flatoides similans, Ecuador, SCHMIDT, p. 378, t. c. **n. sp.**
Flatoptera virescens, Borneo, SCHMIDT, p. 358, t. c. **n. sp.**
Flatula bipunctata, Borneo, SCHMIDT, p. 362, t. c. **n. sp.**
Ormenis maculata, S. America, p. 363, *panamensis*, Panama, p. 364, *fumata*, Ecuador, p. 365, *pehlkei*, Colombia, p. 366, *teniata*, Sumatra, p. 368, *prasina*, Ceylon, p. 370, SCHMIDT, t. c. **n. spp.**
Nephesa truncaticornis ♂, SCHMIDT, p. 203, t. c.
N. carinulata, p. 205, *aurantiaca*, p. 211, Sumatra, id. t. c. **n. spp.**
Paratella variegata, Obi, SCHMIDT, p. 370, t. c. **n. sp.**
Phyma unipunctata, *pura*, p. 196, *hyalina*, *griseo-punctata*, p. 197, *waterstradti*, p. 211, Sumatra, SCHMIDT, t. c.; *P. subapicalis*, Amboina, SCHMIDT, p. 361, t. c. : **n. spp.**
Pæciloptera phalaenoides and allies, table of forms, p. 14, *P. fritillaria* = (*suturata* Mel.), p. 7, *P. melichari* n. n. for *fritillaria* Mel. nec Er., p. 9, *P. phalaenoides* subspp. *n. completa*, p. 12, *parca*, p. 13, JACOBI, SB. Ges. naturf. Berlin 1904.
P. miliaria, Colombia, p. 8, JACOBI, t. c. **n. sp.**

- Pseudoryxa* n. g. near *Oryxa*, p. 200, *P. carinulata* n. sp., Sumatra, p. 201,
SCHMIDT, Stettin Ent. Zeit. lxxv.
Sanurus venosus ♂, SCHMIDT, p. 194, t. c.
Sephena tricolor, Java, SCHMIDT, p. 372, t. c. n. sp.
Siphanta rubra, Queensland, SCHMIDT, p. 358, t. c. n. sp.
Uxantis tenia, Sumatra, SCHMIDT, p. 206, t. c. n. sp.
Walkeria melichari, Sumatra, SCHMIDT, p. 192, t. c. n. sp.

MEMBRACIDÆ.

The Palæarctic *Membracidæ* and *Cercopidæ* (in Moravian), MELICHAR, pp. 3-34, Vestnik. Klub. Prostějov iv.

Leptocentrus subflavus, Cambodia, NOUALHIER, p. 183, pl. x, fig. 5, Mission Pavie iii, n. sp.

CERCOPIDÆ.

[Cf. BREDDIN (172), GIRAULT (612), JACOBI (733, 735), MATSUMURA (922), NOUALHIER (984).]

Anomus cornutus?, relations with ants, PENZIG, pp. 64-67, pl. ii, Atti Soc. Ligustica xv.

Aphrophora assimilis Uhl. = (*Rhinaulax apicalis*), *A. vittata* var. = (*nijima* Mats.), MATSUMURA, p. 32, Annot. zool. Japon. v; *A. parallela*, habits, froth-formation, GIRAULT, pp. 44-48, Canad. Ent. xxxvi.

A. scutellata, p. 34, pl. ii, fig. 8, *brevis, compacta*, fig. 7, p. 35, *fallax*, p. 36, *abieti*, fig. 6, p. 37, *flavomaculata*, fig. 3, p. 39, *harimaensis*, fig. 11, p. 41, *vitis*, fig. 9, p. 42, *nigricans*, p. 43, Japan, MATSUMURA, Annot. zool. Japon. v, n. spp.

Callitettix carinifrons, Siam, NOUALHIER, p. 184, pl. x, fig. 8, and pl. xi, fig. 3, Mission Pavie iii, n. sp.

Clovira callifera, pl. xlv, fig. 15, p. 777, JACOBI, Zool. Jahrb. Syst. xix.

Cosmoscarta undata var. n. *obscurata*, NOUALHIER, p. 183, pl. x, fig. 6, Mission Pavie iii.

C. carens, Tonkin, NOUALHIER, p. 183, pl. x, fig. 7, t. c. n. sp.

Hemipterus n. g. p. 777, near *Tremapterus*, *H. decurtatus* n. sp., Kaffa, p. 778, pl. xlv, fig. 16, JACOBI, Zool. Jahrb. Syst. xix.

Locris amauroptera, p. 772, pl. xlv, fig. 7, *neumannii*, p. 773, fig. 9, *vestigans*, p. 774, fig. 10, N. E. Africa, JACOBI, t. c.; *L. ochroptera*, E. Africa, JACOBI, p. 16, SB. Ges. naturf. Berlin 1904 : n. spp.

Mesoptelyelus n. g. p. 48, *M. nigrifrons*, pl. ii, fig. 13, p. 49, n. sp., Japan, MATSUMURA, Annot. zool. Japon. v.

Oxyrrhacis tarandus, nymph, JACOBI, p. 17, SB. Ges. naturf. Berlin 1904.

Peuceptelyelus nawæ, p. 44, pl. ii, fig. 14, *nigroscutellatus*, fig. 16, p. 45, *medius*, fig. 15, *dimidiatus*, p. 47, Japan, MATSUMURA, Annot. zool. Japon. v, n. spp.

Poophilus terrenus Walk., pl. xlv, fig. 13, *griseus*, Schaum, fig. 14, p. 776, JACOBI, Zool. Jahrb. Syst. xix.

Ptyelus æthiops, N. E. Africa, JACOBI, p. 775, pl. xlv, fig. 12, t. c.; *P. bipunctulatus*, E. Africa, MELICHAR, p. 36, Verh. Ges. Wien liv : n. spp.

P. abieti, pl. ii, fig. 17, p. 50, *guttatus*, pl. iii, fig. 2, p. 51, *glabrifrons*, fig. 3, p. 52, Japan, MATSUMURA, Annot. zool. Japon. v : n. spp.

Tomaspis invenusta, Sobat, JACOBI, p. 771, pl. xlv, fig. 6, Zool. Jahrb. Syst. xix; *T. laqueus*, *erigenea*, *rhodopepla*, *nox*, *illuminatula*, *phantastica*, p. 58, *ephippiata*, *tettigoniella*, p. 59, Ecuador, BREDDIN, Soc. ent. xix : n. spp.

JASSIDÆ.

[Cf. ASHMEAD (54), BRÈTHES (175), HORVÁTH (717), JACOBI (733), KIRKALDY (809), MELICHAR (937), MEUNIER (944), NOUALHIER (984), SLINGERLAND (1306).]

For a nov. gen. of *Jassidæ* of secondary epoch, see Palæoent. p. 125.

Alchisme n. n. for *Triquetra*, *Mysolis* n. n. for *Norsia*, *Thrasymedes* n. n. for *Phacusa*, *Gelastogonia* n. n. for *Oxygonia*, *Boethoos* n. n. for *Parmula*, *Eteoneus* n. n. for *Anomus*, *Kronides* n. n. for *Argante*, *Sundarion* n. n. for *Pyranthe*, *Zanophara* n. n. for *Daunus*, *Gelastophara* n. n. for *Hypselotropis*, *Hesperophara* n. n. for *Leptophara*, *Dioclophara* n. n. for *Lucilla*, KIRKALDY, p. 279, Entomologist 1904.

Cicadula clypeata, E. Africa, MELICHAR, p. 47, Verh. Ges. Wien liv; *C. ungae*, Alaska, ASHMEAD, p. 134, Alaska viii : n. spp.

Deltocephalus stummeri, Turkestan, HORVÁTH, p. 587, Ann. Mus. Hungar. ii; *D. coronatus*, p. 45, *ageratus*, p. 46, E. Africa, MELICHAR, Verh. Ges. Wien liv; *D. harrimani*, *evansi*, Alaska, ASHMEAD, p. 132, Alaska viii; *D. hospes*, Oahu, KIRKALDY, p. 177, Entomologist 1904 : n. spp.

Ectomops rubescens, Siam, NOUALHIER, p. 185, pl. x, fig. 12, Mission Pavie iii, n. sp.

Eutettix quadripunctatus, E. Africa, MELICHAR, p. 44, Verh. Ges. Wien liv; *E. perkinsi*, Oahu, KIRKALDY, p. 178, Entomologist 1904 : n. spp.

Gnathodus punctatus var. n. *lineolatus*, HORVÁTH, p. 586, Ann. Mus. Hungar. ii.

G. bipunctatus, E. Africa, MELICHAR, p. 47, Verh. Ges. Wien liv, n. sp.

Hecalus dubius, E. Africa, MELICHAR, p. 36, t. c.; *H. platatea*, Siam, NOUALHIER, p. 184, pl. x, fig. 11, Mission Pavie iii : n. spp.

Idiocerus almasyi, Turkestan, HORVÁTH, p. 588, Ann. Mus. Hungar. ii, n. sp.

Jassus tornowii, Tucuman, BRÈTHES, p. 344, An. Mus. Buenos Aires xi, n. sp.

Macropsis serena, E. Africa, MELICHAR, p. 35, Verh. Ges. Wien liv, n. sp.

Palicus africanus, p. 40, *conjunctus*, p. 41, E. Africa, MELICHAR, t. c. n. spp.

Parabolocratus tæmionotus, Jambo, JACOBI, p. 780, pl. xlv, fig. 17, Zool. Jahrb. Syst. xix, n. sp.

Pediopsis pictipes, Turkestan, HORVÁTH, p. 589, Ann. Mus. Hungar. ii, n. sp.

Phlepsius chloroticus, p. 38, *fasciolatus*, p. 39, *rhomboides*, p. 40, E. Africa, MELICHAR, Verh. Ges. Wien liv, n. spp.

Platymetopius niveimarginatus, E. Africa, MELICHAR, p. 43, t. c. n. sp.

Scaphoideus strigulatus, E. Africa, MELICHAR, p. 42, t. c. n. sp.

Siva bipunctula, E. Africa, MELICHAR, p. 38, t. c. n. sp.

Stymphalus? *caliger*, E. Africa, MELICHAR, p. 37, t. c. n. sp.

Tettigometra impressifrons and *costulata*, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.

Tettigoniella n. n. for *Tettigonia* auctt., JACOBI, p. 778, Zool. Jahrb. Syst. xix.

Thamnotettix macilentus, Turkestan, HORVÁTH, p. 586, Ann. Mus. Hungar. ii, n. sp.

Typhlocyba comes, the grape leaf-hopper, natural history, SLINGERLAND, Bull. Cornell Exp. Stat. No. 215, illustrations.

PSYLLIDÆ.

[Cf. ASHMEAD (55), HORVÁTH (717), SCHWARZ (1263).]

Structure formed by larva on leaves, SCHWARZ, pp. 153, 154, P. ent. Soc. Washington vi.

- Aphalara schwarzi*, p. 135, *kincaidi*, *alaskensis*, p. 136, Alaska, ASHMEAD, Alaska viii, **n. spp.**
Calophya triozeomina, p. 241, *californica*, p. 242, *flavida*, p. 243, cuts, p. 244, SCHWARZ, P. ent. Soc. Washington vi, **n. spp.**
Euphalerus **n. g.** *Apharinæ*, p. 238, *E. nidifex* **n. sp.**, p. 239, Florida, SCHWARZ, t. c.
Euphyllura arctostaphyli, p. 235, and var. *niveipennis*, p. 236, *arbuti*, p. 237, N. America, SCHWARZ, t. c. **n. spp.**
Psylla nasuta, Turkestan, HORVÁTH, p. 590, Ann. Mus. Hungar. ii; *P. alaskensis*, Alaska, ASHMEAD, p. 137, Alaska viii : **n. spp.**
Trichochermes **n. n.** for *Trichopsylla*, KIRKALDY, p. 280, Entomologist 1904.

APHIDÆ.

[Cf. BALBIANI (77), CHOLODKOVSKY (273, 274), COCKERELL (288), FLÖGEL (519), FROGGATT (562), PERGANDE (1023-1025), SCHOUTEDEN (1240), STAUFFACHER (1335), STSCHELKANOVZEW (1352), THEOBALD (1375).]

The forms and development of *Aphis ribis*, FLÖGEL, Allg. Zeitschr. Ent. ix, pp. 321-333 and 375-381.

Organ of hearing, *Chermes*, STAUFFACHER (1335).

Sex in *Aphidæ*, BALBIANI (77).

Oogenesis in viviparous *Aphis rosæ*, STSCHELKANOVZEW (1352).

The wax-glands of *Chermes*, CHOLODKOVSKY, p. 557, pl. xxxi, figg. 4-6, Zool. Jahrb. Syst. xix.

Panaphis **n. n.** for *Ptychodes*, *Dryaphis* **n. n.** for *Dryobius*, *Hamadryaphis* **n. n.** for *Kessleria*, *Dryopeia* **n. n.** for *Endeis*, *Hyadaphis* **n. n.** for *Siphonocoryne* Pass. 1863 not 1860, KIRKALDY, p. 279, Entomologist 1904.

Aphis persicæ-niger in Australia, FROGGATT, Agric. Gaz. N. S. W. xv, pp. 603-612.

A. sorghi, Sudan, injuring *Sorghum*, THEOBALD, p. 43, plate, 1st Rep. Wellcome Lab. **n. sp.**

Cerataphis lataniæ, note, SCHOUTEDEN, p. 5, Hamburg, Magalhaen. Reise vii.

Chermes, in Colorado, GILLETTE, p. 81, Canad. Ent. xxxvi; *C. orientalis*, gall, *C. pini* variable in migration, distinction queried, CHOLODKOVSKY, pp. 476-479, Zool. Anz. xxvii.

Cladobius beaulahensis, New Mexico, COCKERELL, p. 263, Canad. Ent. xxxvi, **n. sp.**

Macrosiphum granaria, *cerealis*, forms, natural history; PERGANDE, p. 13-21, Bull. Dep. Agric. Ent. xlv; *M. ambrosiæ* var., COCKERELL, p. 262, Canad. Ent. xxxvi.

M. trifolii, N. America, PERGANDE, p. 21, Bull. U. S. Dep. Agric. Ent. xlv, **n. sp.**

Phylloxera caryæ-septum var. *n. perforans*, pl. i, figg. 7, 8, pl. x, figg. 57-60, PERGANDE, P. Davenport Ac. ix.

P. picta, pl. ii, fig. 10, pl. ix, fig. 48, pl. x, figg. 61-63, p. 197, *intermedia*, pl. ii, figg. 11-14, pl. x, figg. 64, 65, p. 199, *foveola*, pl. iii, figg. 15, 16, p. 200, *pilosula*, pl. ii, fig. 17, pl. ix, fig. 49, p. 202, *deplanata*, p. 205, pl. iii, figg. 18-20, pl. iv, figg. 21-23, pl. x, figg. 66-70, *rimosalis*, p. 217, pl. iv, fig. 24, pl. ix, fig. 54, *symmetrica*, p. 230, with varr. *vasculosa*, *purpurea*, p. 233, *notabilis*, p. 235, pl. xii, figg. 82-90, *spinuloida*, p. 247, pl. xvii, figg. 128, 130, *devastatrix*, p. 248, figg. 131-135, *georgiana*, p. 249, pl. xv, figg. 115-117, *perniciosa*, p. 251, pl. viii, fig. 45, pl. xv, figg. 120-123, pl. xviii, figg. 136-140, *querceti*, p. 263, pl. xx, figg. 155-158, *popularia*, p. 266, pl. xxi, figg. 159, 160, *salicicola*, p. 267, pl. xxi, figg. 161-168, *nyssæ*, p. 269, pl. xxi, figg. 169-174, North America, PERGANDE, t. c. **n. spp.**

- Rhopalosiphum acænæ*, Tierra del Fuego, SCHOUTEDEN, p. 4, Hamburg. Magalhaen. Reise vii, **n. sp.**
Sipha berlessei, characters, DEL GUERCIO, p. 4, Bull. Soc. ent. Ital. xxxvi.
Siphocoryne avenæ, natural history, synonymy, PERGANDE, pp. 5-13, Bull. Dep. Agric. Ent. xlv.

ALEYRODIDÆ.

Descriptions of many species, with account of life-history and habits, BEMIS, pp. 471-537, pls. xxvii-xxxvii.

- Aleyrodes iridescentis*, p. 487, *splendens*, p. 489, *pruinosis*, p. 491, *tentaculatus*, p. 494, *kelloggi*, p. 499, *errans*, p. 500, *madroni*, p. 507, *stanfordi*, p. 508, *interrogationis*, p. 510, *merlini*, p. 512, *annicola*, p. 514, *diasemus*, p. 516, *glacialis*, p. 518, *quaintancei*, p. 520, *nigrans*, p. 522, *maskelli*, p. 524, *wellmanæ*, p. 525, *extraniens*, p. 526, *hutchingsi*, p. 532, California, BEMIS, P. U. S. Mus. xxvii, **n. spp.**

COCCIDÆ.

(Cf. BERLESE (106), COCKERELL (294, 295), EMBLETON (450, 451), FROGGATT (560), GREEN (620, 622-626), KIRKALDY (810, 811), MARCHAL (909, 913), MAZZARELLI (929), REH (1126, 1127), REUTER (1159), SANDERS (1207, 1208), STEBBING (1336).]

The nomenclature of *Hemiptera* and specially of *Coccidæ*; KIRKALDY, pp. 254-258, Entomologist 1904.

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Coccidæ of Orange, table, COCKERELL, Mem. Soc. Ant. Alzate xiii, pp. 349-351.

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Distribution and food plants of some *Diaspini*, REH, pp. 171-178.

Amelococcus **n. g.** *A. alluaudi* **n. sp.**, Madagascar, MARCHAL, p. 557, Ann. Soc. ent. France 1904.

Antonina australis, Hunter River, GREEN, p. 463, pl. xvi, P. Linn. Soc. N. S. Wales xxix, **n. sp.**; *A. australis*, FROGGATT, pp. 407-410, plate, Agric. Gaz. N. S. W. xv.

Aspidiotus ancylus, taxonomy, synonymy, variation, COCKERELL, P. Davenport Ac. ix, pp. 61, 62.

A. (Pseudanidia) curculiginis, Java, GREEN, p. 208, Ent. Mag. xl; *A. (Hemiberlesia) immaculatus*, p. 65, *A. (Targionia) subfervens*, p. 66, Victoria, GREEN, Victorian Natural. xxi; *A. piceus*, Ohio, SANDERS, p. 96, pl. viii, fig. 66, Ohio Natural. iv: **n. spp.**

Asterolecanium variolosum, galls, DE STEFANI, L'Ora 1904, 8 pp.: cf. Marcellia iii, p. v.

Chetococcus and *Antonina*, identical, GREEN, p. 465, P. Linn. Soc. N. S. Wales xxix.

Chionaspis furfurus, no. of eggs, GIRAULT, p. 3, Ent. News Philad. xv.

C. formosa, Australia, GREEN, p. 462, P. Linn. Soc. N. S. Wales xxix;

- C. angusta*, Victoria, GREEN, p. 67, Victorian Natural. xxi; *C. sylvatica*, Ohio, SANDERS, p. 95, pl. viii, figg. 64, 65, Ohio Natural. iv : **n. spp.**
- Chrysomphalus minor*, spread in Europe, natural history, MARCHAL, pp. 246-249, Bull. Soc. ent. France 1904.
- Cryptococcus fagi*, injuries and remedies, NEWSTEAD, pp. 755-760, J. Board Agric. xi.
- Ctenochiton serratus*, Victoria, GREEN, p. 67, Victorian Natural. xxi, **n. sp.**
- Coccus caudatus*, *poterii* Walk. notes on, p. 373, *C. sinensis*, cf. *Ericera pela*, GREEN, Ann. Nat. Hist. xiv.
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- Ericera pela* = (*Coccus sinensis* Walk.), GREEN, p. 374, Ann. Nat. Hist. xiv.
- Eriococcus sordidus*, Australia, GREEN, p. 68, Victorian Natural. xxi, **n. sp.**
- Eulecanium curtisi* n. n. for *Coccus aceris* Curtis, KIRKALDY, p. 257, Entomologist 1904.
- Kermes gillettei*, no. of eggs, HIMEBAUGH, p. 188, Ent. News Philad. xv.
- Lecanium* (*Paralecanium*) *expansum* var. *metallicum*, GREEN, p. 377, Ann. Nat. Hist. xiv; *L. capense* Walk. redescribed as *Aspidiotus* (*Aonidiella*) *capensis*, GREEN, p. 375, t. c.; *L. hesperidum*, ♂ in Australia, HOWARD, p. 62, P. ent. Soc. Washington vi; *L. expansum* varr. n. *metallicum*, *javanicum*, p. 205, *rotundum*, p. 206; GREEN, Ent. Mag. xl.
- L. capparidis*, p. 187, pl. lxiii, *frontale*, p. 192, pl. lxv, *signiferum*, p. 197, pl. lxviii, *discrepans*, p. 204, pl. lxx, *punctuliferum*, p. 205, pl. lxx, *subtessellatum*, p. 206, pl. lxxi, *marsupiale*, p. 212, pl. lxxv, *bicruciatum*, pl. 214, pl. lxxvi, *arundinariæ*, p. 220, pl. lxxix, *psidii*, pl. lxxxii, p. 225, *calophylli*, p. 240, pl. lxxxix, *paradeniyense*, p. 241, pl. xc, *zonatum*, pp. 245, pl. xcii, *maritimum*, p. 246, pl. xciii, Ceylon, GREEN, *Coccidæ*, Ceylon; *L. tenebricophilum*, Java, GREEN, p. 204, Ent. Mag. xl : **n. spp.**
- Lepidosaphes cockerelliana* n. n. for *Mytilaspis albus* Cock., KIRKALDY, p. 257, Entomologist 1904.
- L. corrugata*, Java, GREEN, p. 209, Ent. Mag. xl, **n. sp.**
- Margarodes*, longevity, MAYET, p. 206, Bull. Soc. ent. France 1904.
- Monophlebus stebbingi*, natural history, STEBBING, J. Linn. Soc. London xxix, pp. 142-161, pls. xvi-xviii.
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- M. ficifolii*, Italy, BERLESE, Atti Ist. Napoli (5) v, No. 12, p. 3, plate, **n. sp.**
- Orthezia solidaginis*, Ohio, SANDERS, p. 94, pl. viii, figg. 57-63, Ohio Natural. iv, **n. sp.**
- Pseudococcus graminis*, Finland, REUTER, p. 66, Medd. Soc. Faun. Fenn. 1902-03, **n. sp.**
- Pulvinaria maxima*, Java, GREEN, p. 206, Ent. Mag. xl, **n. sp.**
- Trionymus hordei*, omitted from Fernald's Cat., Ent. News Philad. xv, p. 40.

ANOPLURA.

- Ellipoptera* n. n. for *Anoplura*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- The mouth-parts and external anatomy, ENDERLEIN, pp. 121-125, Zool. Anz. xxviii.
- The classification and systematic position of *Anoplura*, table of genera etc., ENDERLEIN, t. c. pp. 134-140, and supplement, p. 220.
- Organs for holding, on feet of *Pediculidæ*, OSBORN, Ohio Natural. iv, pp. 107, 108, cuts.
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- Hæmodipsas* **n. g.** for *lyriocephalus*, Burm. and *ventricosus* Denny, ENDERLEIN, Zool. Anz. xxviii, p. 143.
- Hoplopleura* **n. g.** type *H. acanthopus* Burm., ENDERLEIN, t. c. p. 221.
- Lepidophthirus* **n. g.** on *Macrorhinus leoninus*, Kerguelen isld., p. 44, *L. macrorhini* **n. sp.**, p. 46, ENDERLEIN, Zool. Anz. xxviii.
- Polyplax* **n. g.** for part of *Hæmatopinus*, type *spinulosa* Burm., ENDERLEIN, p. 142, t. c.
- Solenopotes* **n. g.** p. 143, for *S. capillatus* **n. sp.**, Leipzig, p. 144, ENDERLEIN, t. c.
- Trichaulus* **n. g.** p. 141, for *piliferus* Burm. etc., ENDERLEIN, Zool. Anz. xxviii.

(F.) *NEUROPTERA*, s. l.

TRICHOPTERA.

[Cf. BANKS (82-85, 87), Klapálek (817), MORTON (963), RIS (1175), SILFVENIUS (1293-1296), STITZ (1349), STRUCK (1351), THIENEMANN (1382-1384), ULMER (1417-1422).]

The morphology of the genitalia in various families, with numerous figures, Klapálek, pp. 161-197, v plates and illustrations, Bull. Ceska Ac. viii.

Male and female sexual organs, and their relations with those of *Microlepidoptera*, STITZ (1349).

Trichoptera larvæ using stems as cases, SILFVENIUS, pp. 147-150, cuts, Allg. Zeitschr. Ent. ix.

Cases in the light of protection and breathing for larva and pupa, THIENEMANN, Zool. Anz. xxvii, pp. 724-730.

Peculiar structure on abdomen of *Æcetis*, ? sense-organ, RIS, Vierteljahrschr. Ges. Zurich xlix, pp. 370-374, pl. xii.

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Adicella filicornis, early stages, MORTON, pp. 82-84, pl. i, Ent. Mag. xl.

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A. maculata, Washington, BANKS, p. 116, Ent. News Philad. xv, n. sp.

Anabolia spinosa, Patagonia, ULMER, p. 11, Hamburg. Magalhaen. Reise vii, n. sp.

Bereä pullata, larva, ULMER, p. 286, Mt. Mus. Hamburg. xx, Beih. ii.

Cyrnus flavidus, pp. 7-10, pl. figg. 2, *C. insolutus*, pp. 10-12, pl. figg. 3, larvæ and pupæ, SILFVENIUS, Acta Soc. Faun. Fenn. xxvi, No. 2.

C. pallidus, Washington, BANKS, p. 214, P. ent. Soc. Washington vi, n. sp.

Dicosmoeus maculatus, New Mexico, BANKS, p. 107, Tr. Amer. ent. Soc. xxx, n. sp.

Dipseudopsis, trophi, ULMER, Zool. Anz. xxviii, p. 58, cuts.

Drusus discolor, case, THIENEMANN, p. 257, Allg. Zeitschr. Ent. ix.

Glossosoma nylanderii, characters of type, SILFVENIUS, p. 171, Medd. Soc. Faun. Fenn. 1902/03.

G. parvula, p. 108, *ventralis*, p. 109, New Mexico, BANKS, Tr. Amer. ent. Soc. xxx, n. spp.

Glyphopsyche n. g. near *Glyphotetius*, *G. bryanti* n. sp., British Columbia, BANKS, p. 141, P. ent. Soc. Washington vi.

Halesus radiatus ♂ genitalia, ULMER, p. 283, Mt. Mus. Hamburg xx, Beih. ii.

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Helicopsyche annulicornis, Washington, BANKS, p. 212, t. c. n. sp.

Holocentropus dubius, larva and pupa, SILFVENIUS, pp. 3-6, pl. figg. 1, Acta Soc. Faun. Fenn. xxvi, No. 2.

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- Hydropsyche sexfasciata*, Cameroons, ULMER, p. 421, Arkiv Zool. i; *H. speciosa*, Washington, BANKS, p. 214, P. ent. Soc. Washington vi; *H. novamexicana*, New Mexico, BANKS, p. 110, Tr. Amer. ent. Soc. xxx: **n. spp.**
- Hydroptilides*, larvæ, pupæ and cases of 11 species, 6 of them previously unknown, SILFVENIUS, Acta Soc. Faun. Fenn. xxvi, No. 6, 38 pp., 2 pls.
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- Leptocerus flavus*, Washington, BANKS, p. 212, P. ent. Soc. Washington vi, **n. sp.**
- Limnophilus ignavus*, larva and pupa, ULMER, p. 55, Allg. Zeitschr. Ent. ix.
- L. michaelsoni*, p. 7, *armatus*, p. 8, *patagonicus*, p. 9, *setipes*, p. 10, Patagonia, ULMER, Hamburg. Magalhaen. Reise vii, **n. spp.**
- Macronema sjostedti*, Cameroons, ULMER, p. 419, Arkiv Zool. i, **n. sp.**
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- Myrtacides nigra* and *longicornis*, pupæ, THIENEMANN, p. 261, t. c.
- Neuronia clathrata*, metamorphoses, STRUCK, pp. 2–7, Mt. Ges. Lubeck (2) xix.
- Nyctiophylax occidentalis*, W. Africa, ULMER, p. 355, Zool. Anz. xxviii, **n. sp.**
- Æstropsis bipunctata* ♂, ULMER, p. 413, Arkiv Zool. i.
- Orthotrichia pallida*, Washington, BANKS, p. 215, P. ent. Soc. Washington vi; *O. americana*, Washington, BANKS, p. 116, Ent. News Philad. xv: **n. spp.**
- Oxyethira mirabilis*, Scotland, MORTON, p. 327, Tr. ent. Soc. London 1904; *O. dorsalis*, Washington, BANKS, p. 216, P. ent. Soc. Washington vi: **n. spp.**
- Plectrotarsus*, trophi, ULMER, Zool. Anz. xxviii, p. 58, cuts.
- Polycentropina*, larvæ and pupæ, SILFVENIUS, p. 13, Acta Soc. Faun. Fenn. xxvi, No. 2.
- Potamorites biguttatus*, metamorphosis, THIENEMANN, pp. 258–261, Allg. Zeitschr. Ent. ix.
- Protomacronema* **n. g.** p. 416, *P. pubescens* **n. sp.**, Cameroons, p. 417, ULMER, Arkiv Zool. i; *P. hyalinum*, W. Africa, ULMER, p. 354, Zool. Anz. xxviii, **n. sp.**
- Protoptila* for *Beræa maculata* Hag., BANKS, p. 215, P. ent. Soc. Washington vi, **n. sp.**
- Psilopteryx*? *brevipennis*, New Mexico, BANKS, p. 108, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Ptilocolepus granulatus*, habits, metamorphoses, taxonomy, THIENEMANN, pp. 418–424, Allg. Zeitschr. Ent. ix.
- Rhyacophila stigmatica*, New Mexico, BANKS, p. 108, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Stactobia eatoniella*, larva, THIENEMANN, p. 261, Allg. Zeitschr. Ent. ix.
- Stenophylax branchiatus*, p. 17, *S.?* *appendiculatus*, p. 19, Patagonia, ULMER, Hamburg. Magalhaen. Reise vii, **n. spp.**

NEUROPTERA-PLANIPENNIA (incl. PANORPIDÆ).

[Cf. BANKS (81, 82), CURRIE (334, 335), FROGGATT (557, 562), KEMPNY (785, 1232), KIRBY (806), NAVÁS (974–976), WEELE (1501), XAMBEU (1539).]

HEMEROBIIDÆ and PANORPIDÆ.

- Acanthaclisis maclachlani*, N. W. Australia, VAN DER WEELE, p. 210, Notes Leyden Mus. xxiv, **n. sp.**
- Albardia furcata*, characters, WEELE, p. 203, t. c.
- Ascalaphus immaculatus*, the type, WEELE, p. 204, t. c.; *A. maculatus* type, is *niger* Borkh., WEELE, p. 167, t. c.; *A. ictericus* and *meridionalis*, larva and habits, XAMBEU, pp. 121, 123, Ann. Soc. Linn. Lyon l.
- Berotha piepersii*, Java, WEELE, p. 214, Notes Leyden Mus. xxiv, **n. sp.**
- Brachynemurus elongatus*, New Mexico, BANKS, p. 105, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Chasmatoptera sheppardi*, Asia Minor, KIRBY, p. 60, Ann. Nat. Hist. xiv, **n. sp.**
- Chrysopa vulgaris* var. *n. radialis*, p. 119, *nigricostata* var. *n. marginata*, p. 120, *C. inornata*, full description, p. 124, NAVÁS, Bol. Soc. Aragon. iii; *C. vulgaris*, larva, XAMBEU, pp. 215–217, Ann. Soc. Linn. Lyon l.
- C. iberica*, Moncayo etc., NAVÁS, p. 99, Bol. Soc. Aragon. ii; *C. cosmeta*, Madrid, NAVÁS, p. 125, op. cit. iii; *C. jaluitana*, Marshall Islands, KEMPNY, p. 403, Zool. Jahrb. Syst. xx; *C. juluitana*, Marshall Islands, p. 353, *vicina*, Australia, p. 354, KEMPNY, Verh. Ges. Wien liv: **n. spp.**
- Cordulecerus inquinatus*, adult, WEELE, p. 205, Notes Leyden Mus. xxiv.
- Croce attenuata*, Queensland, pl. xx, fig. 1, p. 675, FROGGATT, P. Linn. Soc. N. S. Wales 1904, **n. sp.**
- Cymothalis liberiensis*, W. Africa, WEELE, p. 212, Notes Leyden Mus. xxiv, **n. sp.**
- Helicomitus philippinensis*, Luzon, WEELE, p. 206, t. c. **n. sp.**
- Hemerobius dyari*, p. 85, *kokaneeanus*, p. 86, *caudelli*, p. 87, *glacialis*, *kootenayensis*, p. 88, British Columbia, CURRIE, P. ent. Soc. Washington vi; *H. transversus*, *nevadensis*, *dorsatus*, p. 61, *pictus*, *speciosus*, p. 62, U. S. N. Amer., BANKS, Canad. Ent. xxxvi; *H. angustus*, New Mexico, BANKS, p. 102, Tr. Amer. ent. Soc. xxx; *H. bistrigatus*, p. 79, *pallens*, p. 80, California, CURRIE, P. ent. Soc. Washington vi: **n. spp.**
- Hybris flavicans*, Sumatra, p. 208, *borneënsis*, Borneo, p. 209, WEELE, Notes Leyden Mus. xxiv, **n. spp.**
- Merope tuber*, note, BARBER, p. 50, P. ent. Soc. Washington vi.
- Micromus australis*, N. S. Wales, FROGGATT, p. 609, plate, Agric. Gaz. N. S. W. xv, **n. sp.**
- Myrmeleon arenarius*, *ochreatus*, figg. 1, 2, pl. iv, NAVÁS, Bol. Soc. Aragon. iii; *M. formicarius*, *formicaleo*, in Holland, WEELE, pp. 110, 111, Ent. Ber. Nederland. i; *M. bifasciatum*, *sinuatum*, examination of types, WEELE, pp. 167, 168, Notes Leyden Mus. xxiv; *M.*, the Spanish, pp. 21–24, pl. i, *M. arenarius* n. n. for *variegatus* Ramb. nec Klug, p. 22, NAVÁS, Butl. Inst. Catalan. i.
- M. ochreatus*, Spain, NAVÁS, p. 23, t. c.; *M. distichus*, p. 106, *sticticus*, p. 107, Spain, NAVÁS, Bol. Soc. Aragon. ii: **n. spp.**
- Panorpa meridionalis* var. *n. fenestrata*, NAVÁS, p. 101, t. c.
- Psammoleon inscriptus* Hag., BANKS, p. 106, Tr. Amer. ent. Soc. xxx.
- Theleproctophylla variegata* Klug and *barbara* L. are distinct species, WEELE, pp. 95–98, Notes Leyden Mus. xxv.
- Ulula præcellens* to *Cordulecerus*, WEELE, p. 205, t. c.

PSEUDO-NEUROPTERA.

PSOCIDÆ.

[Cf. BANKS (82, 87), ENDERLEIN (454, 455), REUTER (1161), RIBAGA (1171).]

Psocoptera, new ordinal name for *Psocidæ*, SHIPLEY, p. 261, Zool. Anz. xxvii. Interpretation of the stigma, ENDERLEIN, p. 111, Zool. Jahrb. Syst. xx.

Calopsocus infelix, wings etc., ENDERLEIN, p. 106, pl. vii, fig. 1, op. cit. xix. *Edipsocus*, forms in Finland, pp. 5-8, *E. hyalinus* var. n. *abdominalis*, p. 6,

REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Ectopsocus and *Micropsocus*, *E. briggsi* var. n. *meridionalis*, RIBAGA, pp. 294-298, Redia i.

Hemineura fusca, Finland, pl. ii, fig. 2, p. 3, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9, n. sp.

Leptocella gracilis, New Mexico, BANKS, p. 110, Tr. Amer. ent. Soc. xxx, n. sp.

Leptodella n. n. for *Leptella* Reut. p. 11, characters and peculiarities, pp. 8-14, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Leptosocus, characters amended, REUTER, pp. 18-20, t. c.

Nymphopsocus destructor, account of, ENDERLEIN, pp. 727-732, pl. xliii, Zool. Jahrb. Syst. xix; *N. destructor*, characters, pp. 20-22, pl. iii, figg. 1-3, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Psocus bisignatus, *elegans*, N. America, BANKS, p. 203, P. ent. Soc. Washington vi; *P. cockerelli*, New Mexico, BANKS, p. 100, Tr. Amer. ent. Soc. xxx: n. spp.

Psyllipsocus ramburi, characters, REUTER, pp. 22-25, pl. iii, figg. 4-8, Acta Soc. Faun. Fenn. xxvi, No. 9.

Reuterella, characters and species, REUTER, pp. 16-18, t. c.; *R. helvimaculata* var. n. *enderleini*, SCHILLE, p. 475, Zool. Anz. xxvii.

Sva n. g. p. 109, near *Perientomum*, *S. dahliana* n. sp., Bismarck Archipelago, p. 110, ENDERLEIN, Zool. Jahrb. Syst. xx.

MALLOPHAGA.

[Cf. CARRIKER (247), KELLOGG & CHAPMAN (784).]

Lipoptera n. n. for *Mallophaga*, SHIPLEY, p. 261, Zool. Anz. xxvii.

Fresh identification of mouth-parts of *Læmobothrium*, WATERHOUSE, p. v, cut, P. ent. Soc. London 1904.

Mallophaga of Costa Rica, with some general notes, CARRIKER, Stud. Univ. Nebraska iii.

KELLOGG's & CHAPMAN's memoir on Hawaiian *Mallophaga* (1902) is reprinted in Fauna Hawaiensis iii, pp. 305-321, pl. x.

Colpocephalum osborni var. n. *costaricense*, p. 172, CARRIKER, Stud. Univ. Nebraska iii.

C. gypagi, pl. vi, fig. 2, p. 171, *extraneum*, fig. 3, p. 173, *luroris*, fig. 4, p. 174, *mirabile*, fig. 5, p. 175, Costa Rica, CARRIKER, t. c. n. spp.

Docophorus platystomus umbrosus var. n. p. 126, CARRIKER, t. c.

D. transversifrons, p. 127, pl. i, fig. 1, *bruneri*, p. 128, fig. 2, *underwoodi*, p. 130, fig. 3, *cancellus*, p. 132, fig. 4, Costa Rica, CARRIKER, t. c. n. spp.

Goniocotes eurysema, Costa Rica, pl. iii, fig. 6, p. 150, CARRIKER, t. c. n. sp.

Goniodes minutus, pl. iv, figg. 1, 2, p. 155, *aberrans*, figg. 4, 5, p. 157, Costa Rica, CARRIKER, t. c. n. spp.

Kelloggia n. g. p. 153, *brevipes* n. sp. pl. i, fig. 2, p. 154, on *Tinamus*, Costa Rica, CARRIKER, t. c.

- Læmobothrium delogramma*, pl. iv, fig. 6, p. 159, *oligothrix*, fig. 7, p. 161, Costa Rica, CARRIKER, t. c. **n. spp.**
- Lipeurus longipes tinami* var. n. p. 146, CARRIKER, t. c.
- L. postmarginatus*, pl. iii, fig. 4, p. 147, Costa Rica, CARRIKER, t. c. **n. sp.**
- Menopon tridens costaricensis* var. n. p. 178, *M. præcursor meridionale* var. n. p. 180, *M. thoracicum* varr. n. *majus* and *fuscum*, p. 187, CARRIKER, t. c.
- M. ortalidis*, pl. vii, fig. 1, p. 179, *macrocybe*, fig. 2, p. 181, *tityrus*, fig. 4, p. 182, *stenodesmum*, pl. viii, fig. 2, p. 184, *difficile*, fig. 1, p. 188, *palloris*, fig. 3, p. 189, *laticorpus*, p. vii, fig. 5, p. 190, Costa Rica, CARRIKER, t. c. **n. spp.**
- Nirmus fuscus epustulatus* var. n. p. 133, *N. brachythorax ptiliogonis* var. p. 143, CARRIKER, t. c.
- N. rhamphasti*, p. 135, pl. ii, fig. 1, *hastiformis*, fig. 2, p. 136, *parabolocybe*, fig. 3, p. 137, *francisi*, fig. 5, p. 139, *melanacocus*, fig. 6, p. 141, *pseudophæus*, pl. iii, fig. 1, p. 142, *caligineus*, fig. 2, p. 144, Costa Rica, CARRIKER, t. c. **n. spp.**
- Nitzschia bruneri*, p. 177 with var. *meridionalis*, p. 178, Costa Rica, CARRIKER, t. c. **n. sp.**
- Ornicholax n. g. robustus n. sp.* on *Tinamus*, Costa Rica, pl. ix, fig. 1, p. 151, CARRIKER, t. c.
- Physostomum jiminezi*, pl. v, fig. 1, p. 163, *doratophorum*, fig. 4, p. 165, *leptosomum*, fig. 2, p. 166, *subangulatum*, fig. 3, p. 168, Costa Rica, CARRIKER, t. c. **n. spp.**

TERMITIDÆ or ISOPTERA.

[Cf. DESNEUX (368–373), JACOBSON (741), SILVESTRI (1299), SJÖSTEDT (1301), WASMANN (1485, 1487), WHEELER (1524).]

The classification and genera of *Termitidæ*, with list of the species, DESNEUX, *Isoptera*, in Wytzman Gen. Ins. fasc. xxv, 52 pp., 2 pls. Classification of *Termitidæ*, the family of itself to form the Order *Isoptera*, three subfamilies, DESNEUX, Ann. Soc. ent. Belgique xlviii, pp. 278–286.

Note on the taxonomy of *Termitidæ*, DESNEUX, pp. 149, 150, t. c. DESNEUX & WASMANN (370, 371, 1487) discuss the phylogeny of *Termitidæ*. Phylogeny and relations of Termites, WHEELER (1524).

Notes on *Termitidæ* at Tortosa, Spain, JAIME PUJURLA, Bol. Soc. Aragon. Ci. nat. iii, pp. 23 etc. etc.

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Habits of *Hodotermes* in Turkestan, JACOBSON, Annuaire Mus. St. Petersb. ix, pp. 57–107, and WASSILJEV, pp. 97 etc.

Brief and unimportant note on Termites in Rhodesia, LOIR, p. 90, P. Rhodesia Ass. iii.

Habits of S. American *Termitidæ*, SILVESTRI, Mem. Soc. Ant. Alzate xiii, pp. 353–378.

The two kinds of nymphs, PÉREZ (1022).

Termitidæ at water 50 metres below the surface, ELLIOT, Geograph. J. xxiv, p. 515.

Anacanthotermes subg. n. cf. *Hodotermes*.

Archotermopsis subg. n. *T. wroughtoni* (below), DESNEUX, p. 13, Isoptera.

Calotermes marginalis in Turkestan, JACOBSON, pp. 72 etc., Annuaire Mus. St. Petersb. ix.

C. desneuxi, Madagascar, p. 11, *maroccoensis*, Tangier, *planiceps*, S. Africa,

- p. 17, *auriceps*, Cameroons, p. 19, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4; *C. militaris*, Ceylon, DESNEUX, p. 146, Ann. Soc. ent. Belgique xlviii; *C. wagneri*, Brazil, DESNEUX, p. 286, t. c. : **n. spp.**
- Eutermes sudanicus*, Soudan, p. 77, *palearcticus*, Algeria, p. 79, *chiasognathus*, Cameroons, p. 85, *salebrithorax*, Madagascar, p. 89, *mobilis*, Soudan, p. 91, *occidentalis*, Kerry Coast, p. 93, *divellens*, Madagascar, p. 94, *aluco*, Soudan, p. 95, *rapulum*, p. 99, *usambarensis*, p. 103, Usambara, *maculiventris*, Gaboon, p. 104, *clepsydra*, Madagascar, p. 108, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4 : **n. spp.**
- Hodotermes vagans septentrionalis* subsp. n., JACOBSON, p. 65, Annuaire Mus. St. Petersb. ix.
- H. (Anacanthotermes)* subg. n. p. 76) *turkestanicus*, p. 61, *ahngerianus*, p. 67, JACOBSON, t. c. **n. spp.**
- Mastotermes*, characters and importance, DESNEUX, pp. 279–281, Ann. Soc. ent. Belgique xlviii, and WASMANN, t. c.
- Rhinotermes taurus*, Surinam, DESNEUX, p. 146, t. c. **n. sp.**
- Termes lucifugus*, swarming at Bordeaux, LALOY, p. 131, Naturaliste 1904; *T. havilandi* n. n. for *latifrons* Hav. nec Sjöst., DESNEUX, p. 151, Ann. Soc. ent. Belgique xlviii; *T. desertorum*, worker and imago, DESNEUX, p. 147, t. c.
- T. canalifrons*, p. 47, Madagascar, *fidens*, West Africa, p. 52, *aurora*, Zanzibar, p. 60, *agilis*, Liberia, p. 61, *fuscofemoralis*, Red Sea, p. 62, *ramulosus*, E. Africa, p. 64, *salebrifrons*, N. E. Africa, p. 65, *erodens*, Red Sea, p. 66, *redenianus*, Usambara, p. 68, *tragardhi*, Soudan, p. 71, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4; *T. annamensis*, Annam, *zenkeri*, Cameroons, DESNEUX, p. 148, Ann. Soc. ent. Belgique xlviii; *T. bouvieri*, Maraquitia, p. 287, *tenuirostris*, Mexico, p. 288, DESNEUX, t. c. : **n. spp.**
- Termitogeton* subg. n. for *T. planus* Hav., DESNEUX, p. 374, t. c.
- Termopsis wroughtoni*, Kashmir, DESNEUX, p. 445, J. Bombay Soc. xv, **n. sp.**

EMBIIDÆ = EMBIOPTERA.

- [Cf. FROGGATT (557), KUSNEZOV (850), LÉGER (870), VERHOEFF (1434), WASMANN (1485).]
- Embioptera* new ordinal n. for *Embiidæ*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- Anatomy and taxonomy of *Embiidæ*, treating them as suborder nov. *Adenopoda* of *Isoptera*, VERHOEFF, Acta Ac. German. lxxxii, No. 2, 65 pp., 4 pls.
- The affinities of *Embiidæ* from a consideration of their parasites, LÉGER, pp. 365, 366, Arch. Protistenk. iii.
- Embia taurica*, habits, taxonomy etc., KUSNEZOV, pp. 138–173, Horæ Soc. ent. Ross. xxxvii.
- E. camerunensis*, W. Africa, VERHOEFF, p. 203, Acta Ac. German. lxxxii, **n. sp.**
- Euembia* subg. n. for *Embia*, male-winged species, VERHOEFF, t. c. p. 201.
- Haploembia* subg. n. for *E. solieri*, VERHOEFF, t. c. p. 201.
- Oligotoma* ? *termitophila*, Soudan, WASMANN, pl. i, fig. 6, p. 17, Jägerskiöld exp. No. 13; *O. gurneyi*, pl. xx, figg. 2, 3, p. 672, *agilis*, figg. 4, 6, p. 673, New South Wales, FROGGATT, P. Linn. Soc. N. S. Wales 1904, **n. spp.**

PERLIDÆ or PLECOPTERA.

- [Cf. BANKS (82), Klapálek (818), Navás (974).]

Patagonian *Perlidæ*, Klapálek, Hamburg. Magalhaen. Reise vii, 13 pp.

- Acroneuria nigrita*, New Mexico, BANKS, p. 98, Tr. Amer. ent. Soc. xxx, n. sp.
- Arcynopteryx* n. g. for part of *Dictyopteryx*, Klapálek, p. 7, Rozp. Ceske Ak. Praze ii, xiii, No. 17.
- Chloroperla pallidula*, New Mexico, BANKS, p. 99, Tr. Amer. ent. Soc. xxx, n. sp.
- Dictyogenus* subg. n. for *D. alpina* etc., Klapálek, p. 8, Rozp. Ceske Ak. Praze ii, xiii, No. 17.
- Dictyopterygella* n. subg. p. 5, *D. septentrionis* n. sp., Siberia, p. 6, Klapálek, t. c.
- Griopteryx* revised, Klapálek, Hamburg. Magalhaen. Reise vii.
- G. tigrina*, Peru, p. 11, *michaelseni*, Tierra-del-fuego, p. 12, id. t. c. n. spp.
- Isogenus nubecula*, nymph, structure, Klapálek, pp. 8–10, Rozp. Ceske Ak. Praze ii, xiii, No. 17.
- Teniopteryx ornata*, p. 102, *dusmeti*, p. 104, *matritensis*, p. 105, Spain, NAVÁS, Bol. Soc. Aragon. ii, n. spp.

EPHEMERIDÆ.

[Cf. NAVÁS (974), REITZENSTEIN (1157), ULMER (1423).]

- Ephemeroptera* new ordinal n. for *Ephemeridæ*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- Agnatha* Meinert = (*Plectoptera* Pack.) to be used for this Order, BÖRNER, p. 525, Zool. Anz. xxvii.
- The terms *Plectoptera*, *Anisoptera* and *Ephemeroptera*, BANKS, p. 155, Science xx.
- ULMER gives notes on *Leptophlebia*- and *Baëtis*-like nymphs from Patagonia, Hamburg. Magalhaen. Reise vii.
- Ephemeridæ* re-entering water, SLADE, p. 15, Ent. Mag. xl.
- Permian *Ephemeridæ*, new forms, see p. 125, Palæo-entomology, HANDLIRSCH.
- Swarms of a may-fly, SMITH, p. 318, Ent. News Philad. xv.
- Baëtis propinquus*, relations of sexes, MOORE, p. 289, Ent. News Philad. xv.
- Ephemera virgo* in Saône-et-Loire, MARCHAL, pp. 260–262, Bull. Soc. Autun xv.
- E. hispanica*, Burgos, NAVÁS, p. 100, Bol. Soc. Aragon. ii, n. sp.

ODONATA or PARANEUROPTERA.

- [Cf. BUTLER (211), CALVERT (220), CURRIE (336), FÖRSTER (536), HANDLIRSCH (662), HEYMONS (683), LUCAS (890), MARTIN (919), NEEDHAM (978), PIERRE (1087), RIS (1176), SLEVOGT (1305), WILLIAMSON (1531, 1532).]
- Paraneuroptera* new ordinal name for *Odonata*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- The terms *Archiptera*, *Pseudoneuroptera*, *Paraneuroptera*, BANKS, p. 155, Science xx.
- WILLIAMSON revises the *Calopteryginæ* of Burma and Lower Siam, 12 genn. and 21 species, gives the characters of genera and species, some figures and synonymy and describes 1 n. sp., P. U. S. Mus. xxviii, No. 1389, pp. 165–187.
- The *Odonata*-fauna of southern S. America, RIS, Hamburg. Magalhaen. Reise vii.
- List of *Odonata* of Indo-China, MARTIN, pp. 204–221, Mission Pavie iii.
- The morphology of abdomen and its appendages, larva and imago, HEYMONS (683), HANDLIRSCH (662).

HORTENSE BUTLER gives the results of a study of the labium in the young and adult, *Tr. Amer. ent. Soc.* xxx, pp. 111–134, pls. ii–vii.

Eyes of *Æschna*, VIGIER (1456).

NEEDHAM describes 40 nymphs, of which 36 for the first time, most of them being figured; they are chiefly American with about eight Batavian, *P. U. S. Mus.* xxvii, pp. 685–720, pls. xxxviii–xliv.

Hatching of *Lestes viridis*, PIERRE, pp. 477–484, pl. iv, *Ann. Soc. ent. France* 1904.

Acanthagrion ambiguum, Buenos Aires, RIS, p. 13, Hamburg. Magalhaen. Reise vii, **n. sp.**

Æschna cornigera and allies, characters, RIS, p. 23, t. c.; *A. grandis*, habits, SLEVOGT, p. 37, *Soc. ent.* xix.

Agrion armatum, characters, LUCAS, p. 33, pl. iii, figg. 2–5, *Entomologist* 1904.

Allopetalia reticulosa, characters, cuts, RIS, pp. 21–23, Hamburg. Magalhaen. Reise vii.

Amphiaschna grubaueri, Malacca, FÖRSTER, p. 355, *Ins. Börse* 1904, **n. sp.**

Antigrion n. g. type *Agrion gayi*, RIS, p. 7, Hamburg. Magalhaen. Reise vii.

Azuma n. g. for *Epophthalmia elegans* Br., NEEDHAM, p. 698, *P. U. S. Mus.* xxvii.

Cordulia ænea, natural history notes, copula, ROCQUIGNY-ADANSON, *Rev. Sci. Bourbonnais* xvii, pp. 128, 129.

Davidius fruhstorferi, Tonkin, MARTIN, p. 215, *Mission Pavie* iii, **n. sp.**

Dysphæa basitincta, Tonkin, MARTIN, p. 218, t. c. **n. sp.**

Echo maxima, Tonkin, MARTIN, p. 219, t. c. **n. sp.**

Gomphidia krugeri, Tonkin, MARTIN, p. 216, t. c. **n. sp.**

Gomphus thomassoni to *Onychogomphus*, characters, MARTIN, p. 213, t. c.;

G. furcifer, nymph; WALKER, p. 358, *Canad. Ent.* xxxvi.

G. vermicularis, Tonkin, MARTIN, p. 214, *Mission Pavie* iii, **n. sp.**

Hagenius gigas, Tonkin, MARTIN, p. 216, t. c. **n. sp.**

Heterogomphus unicolor, Siam, MARTIN, p. 211, t. c. **n. sp.**

Ischnura elegans var., F. & H. CAMPTON, p. 252, *Entomologist* 1904.

Lestes viridis, ♂ appendages, LUCAS, p. 33, pl. iii, fig. 6, *Entomologist* 1904;

L. viridis, emergence from egg, young larva, PIERRE, p. 30, *Bull. Soc. ent. France* 1904, GIARD, t. c. p. 31.

Macromia septima Selys, Java and Tonkin, MARTIN, p. 211, *Mission Pavie* iii, ? **n. sp.**

Merogomphus n. g. paviei n. sp., Tonkin, MARTIN, p. 214, t. c.

Micrathyria berenice, nymph, CALVERT, p. 174, *Ent. News Philad.* xv.

M. pallida, Brazil, NEEDHAM, p. 710, *P. U. S. Mus.* xxvii, **n. sp.**

Neurothemis septentrionis, Sikkim, FÖRSTER, p. 363, *Ins. Börse* 1904, **n. sp.**

Onychogomphus camelus, Tonkin, MARTIN, p. 212, *Mission Pavie* iii, **n. sp.**

Onychothemis abnormis var. *n. tonkinensis*, MARTIN, p. 209, t. c.

O. culminicola, Upper Malacca, FÖRSTER, p. 362, *Ins. Börse* 1904, **n. sp.**

Orolestes octomaculata, Cambodia, MARTIN, p. 220, *Mission Pavie* iii, **n. sp.**

Oxyagrion saliceti, Buenos Aires, RIS, p. 9, Hamburg. Magalhaen. Reise vii, **n. sp.**

Pseudothemis jorina, Upper Malacca, FÖRSTER, p. 363, *Ins. Börse* 1904, **n. sp.**

Psolodesmus dorothea, Formosa, WILLIAMSON, p. 249, cuts, *Ent. News Philad.* xv, **n. sp.**

Thaumatoneura pellucida, Costa Rica, CALVERT, p. 216, *Ent. News Philad.* xv, **n. sp.**

Trithemis aurora, minuscula, wings, NEEDHAM, pl. xlv, p. 709, *P. U. S. Mus.* xxvii.

THYSANOPTERA.

[Cf. BÖRNER (157), DANIEL (350), FROGGATT (556).]

The *tropi*, relations with *Hemiptera*, BÖRNER (157).

Caliothrips **n. g.** p. 296, *C. woodworthi* **n. sp.**, California, p. 297, DANIEL, Ent. News Philad. xv.

Criptothrips californicus, S. California, DANIEL, p. 293, t. c. **n. sp.**

Euthrips pyri, San Leandro, DANIEL, p. 294, t. c. **n. sp.**

Idolothrips, habits, life-history, eggs, *I. spectrum* ♀ = (*marginata* Hal.), *spectrum* ♂ var. = (*lacertina* Hal.), FROGGATT, P. Linn. Soc. N. S. Wales xxix, pp. 54-57, pl. iii.

Sericothrips apteris, Berkely, DANIEL, p. 295, Ent. News Philad. xv, **n. sp.**

(G.) *APTERA* or *THYSANURA* and
COLLEMBOLA.

[Cf. BRUNTZ (196), ESCHERICH (1485), FOLSOM (522), Klapálek (816), PHILIPTSCHENKO (1045), SILVESTRI (1297, 1300).]

Aptera, as ordinal name for *Thysanura*, SHIPLEY, Zool. Anz. xxvii, p. 261.
Atelura sudanensis, White Nile, ESCHERICH, p. 20, Jägerskiöld exp. No. 13,
n. sp.

Campodea, anatomy, PHILIPTSCHENKO (1045).

Diptura n. order for *Thysanura entotropha* Grassi, BÖRNER, p. 525, Zool. Anz. xxvii.

Japyx solifugus, in Crimea, KUSNEZOV, p. 227, Rev. Russe Ent. iv.

J. sharpi, Kauai, SILVESTRI, p. 293, pl. viii, figg. 1, 2, Fauna Hawaiiensis iii, n. sp.

Lepisma hawaiiensis, Kauai, SILVESTRI, p. 296, pl. viii, fig. 19, t. c. n. sp.

Machilidae, tabulation, SILVESTRI, pp. 4-9, Redia ii.

Machiloides n. g. for *Machilis appendiculata*, SILVESTRI, p. 4, t. c.

Machilis alternata, Umbria, SILVESTRI, p. 6, t. c.; *M. perkinsi*, Kauai, p. 294, *heteropus*, Kauai, Hawaii, p. 295, SILVESTRI, Fauna Hawaiiensis iii : n. spp.

Præmachilis meticulosa, Umbria, SILVESTRI, p. 7, Redia ii, n. sp.

COLLEMBOLA.

[Cf. ABSOLON (6, 7), AGREN (18), AXELSON (68, 68A), CARPENTER (243), CARPENTER & EVANS (245), HOFFMANN (694), SCHÖTT (1234).]

Apontoptera n. n. for *Collembola*, SHIPLEY, p. 261, Zool. Anz. xxvii.

Synaptera and *Collembola*, the terms, BANKS, p. 155, Science xx.

Notes on variation, etc., of a Norwegian coll. of *Collembola*, AXELSON, pp. 65-84, Ent. Tidskr. xxv.

Antennal and postantennal organ, ABSOLON, pp. 83-89, Vestnik. Klub. Prostejove iii.

Structure and function of ventral tube, cephalic glands, HOFFMANN, pp. 87-116, Zool. Anz. xxviii.

Achorutes spp., post-antennary organ, SCHÖTT, pl. i, pp. 5-10, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.

A. propinquus, Edinboro, CARPENTER & EVANS, p. 217, pl. iv, figg. 10-14, P. Phys. Soc. Edinb. xv; *A. bengtssoni*, p. 2, figg. 1-4, *serratus*, p. 5, figg. 5-7, *mitis*, p. 6, Lapland, AGREN, Arkiv Zool. ii, No. 1 : n. spp.

Anurida amorita in Siberia, AXELSON, p. 4, Ofv. Finska Forh. xlv, No. 20.

Dicyrtoma pygmaea var. n. *purpurea*, ABSOLON, p. 61, Vestnik. Klub. Prostejove ii; *D. palmata* in Siberia, AXELSON, p. 12, fig. 7, Ofv. Finska Forh. xlv, No. 20.

D. violacea, Moravia, ABSOLON, p. 61, Vestnik. Klub. Prostejove ii, n. sp.

Entombrya nivalis ab. n. *dorsalis*, AGREN, p. 22, figg. 14-16, Arkiv Zool. ii, No. 1.

- E. insularis*, Hawaii, pl. ix, figg. 7-11, *kalakaua*, Kauai, figg. 12-16, p. 301, CARPENTER, Fauna Hawaiiensis iii, **n. spp.**
- Friesea*, characters, SCHÖTT, p. 17, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.
- Heteromurus hirsutus*, Moravia, ABSOLON, p. 62, Vestnik. Klub. Prostejove ii, **n. sp.**
- Isotoma grandiceps*, amended characters, AXELSON, p. 7, Ofv. Finska Forh. xlv, No. 20; *I. bidenticulata*, characters, p. 17, figg. 11-13, AGREN, Arkiv Zool. ii, No. 1; *I. anophthalma*? unpigmented form, p. 69, *I. mucronata* Axels., a valid species, characters, pp. 72-74, AXELSON, Ent. Tidskr. xxv.
- I. intermedia*, Sweden, SCHÖTT, p. 25, Bih. Svenska Ak. xxviii, Afd. iv, No. 2; *I. poppiusi*, Siberia, AXELSON, p. 5, pl. figg. 1-4, Ofv. Finska Forh. xlv, No. 20; *I. perkinsi*, Kauai, pl. ix, figg. 17-19, p. 302, CARPENTER, Fauna Hawaiiensis iii : **n. spp.**
- Lepidocyrtus lanuginosus* ab. n. *rubiginosa*, AGREN, p. 25, Arkiv Zool. ii, No. 1.
- L. ruber*, Sweden, SCHÖTT, p. 31, Bih. Svenska Ak. xxviii, Afd. iv, No. 2; *L. heterophthalmus*, Hawaii, pl. ix, fig. 1, p. 300, CARPENTER, Fauna Hawaiiensis iii : **n. spp.**
- Neanura ornata* in Siberia, AXELSON, p. 3, Ofv. Finska Forh. xlv, No. 20.
- N. citronella*, Hawaiian islds., pl. ix, figg. 20-27, p. 303, CARPENTER, Fauna Hawaiiensis iii, **n. sp.**
- Onychiurus arcticus* is ab. of *armatus*, AGREN, p. 13, Arkiv Zool. ii, No. 1.
- Papirius rufescens* var. n. *discolor*, SCHÖTT, p. 41, pl. v, figg. 1-5, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.
- Pseudachorutes lapponicus*, Lapland, AGREN, p. 8, fig. 8, Arkiv Zool. ii, No. 1; *P. tuberculatus*, p. 13, *borneri*, p. 14, Sweden, SCHÖTT, Bih. Svenska Ak. xxviii, Afd. iv, No. 2 : **n. spp.**
- Pseudosinella sexoculata*, Sweden, SCHÖTT, p. 34, pl. iv, figg. 8-12, t. c. **n. sp.**
- Schafferia* [n. g., but previously published in 1900] p. 89, *S. emucronata*, Moravia [n. sp. previously described], ABSOLON, p. 91, pl. i, figg. 1-13, Vestnik. Klub. Prostejove iii.
- Schottella crassicornis*, p. 10, pl. ii, figg. 8-12, *sensibilis*, p. 11, figg. 13-20, Sweden, SCHÖTT, Bih. Svenska Ak. xxviii, Afd. iv, No. 2, **n. spp.**
- Sminthurus variegatus*?, Siberia, AXELSON, p. 9, Ofv. Finska Forh. xlv, No. 20.
- Tetrachantella*, characters and position, SCHÖTT, pp. 18-20, pl. iii, figg. 12, 13, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.

(H.) *ORTHOPTERA.*

Phagocytic organs, morphology, DAWYDOFF (354-357).

Synopsis of Orthoptera of Western Europe, BURR (202).

New Permian *Orthoptera*, see p. 125, Palæoentomology, HANDLIRSCH.

FORFICULIDÆ.

[Cf. BENNETT (100), BORELLI (153, 154), BORG (156), BURR (201), CAUDELL (254, 255), DISTANT (382), MJÖBERG (950), REHN (1128).]

General catalogue, KIRBY (806A).

Natural history of *Anisolabis maritima*, BENNETT, *Psyche* xi, pp. 47-53.

Ancistrogaster pæcilocera, Cameroons, BORG, p. 576, pl. xxvi, fig. 8, *Arkiv Zool.* i, **n. sp.**

Anechura schlagintweiti, Tibet, BURR, p. 313, *Tr. ent. Soc. London* 1904, **n. sp.**

Anisolabis azteca = (*bormansi* Scudd.), CAUDELL, p. 180, *J. N. York Ent. Soc.* xii.

A. gaudens, India, *albovittata*, Madagascar, BURR, p. 291, *Tr. ent. Soc. London* 1904; *A. peregrina*, in Sweden imported from Matto Grosso, MJÖBERG, p. 131, *Ent. Tidskr.* xxv; *A. festæ*, Ecuador, BORELLI, p. 3, *Boll. Mus. Torino* xix, No. 475 : **n. spp.**

Apterygida athymia **n. n.** for *Forfic. japonica* De B., REHN, p. 540, *P. U. S. Mus.* xxvii; *A. huseinæ* to *Labidura*, REHN, p. 539, t. c.; *A. linearis*, use of forceps, BAER, p. 163, *Bull. Soc. ent. France* 1904.

A. bonchampsii, Abyssinia, p. 317, *vishnu*, Darjiling, p. 318, BURR, *Tr. ent. Soc. London* 1904, **n. spp.**

Auchenomus minor, Philippines, CAUDELL, p. 108, *J. N. York Ent. Soc.* xii, **n. sp.**

Bormansia impressicollis ♂, BURR, p. 287, *Tr. ent. Soc. London* 1904.

B. meridionalis, Transvaal, BURR in DISTANT, *Ins. transvaal.* i, p. 97, **n. sp.**

Brachylabis sjostedi, Cameroons, BORG, p. 568, *Arkiv Zool.* i; *B. malgacha*, Madagascar, BURR, p. 292, *Tr. ent. Soc. London* 1904 : **n. spp.**

Carcinophora waddyi, Martinique, BURR, p. 290, t. c.; *C. fusca*, Santiago, BORELLI, p. 1, *Boll. Mus. Torino* xix, No. 475 : **n. spp.**

Chætospasia volcana, Madagascar, BURR, p. 301, *Tr. ent. Soc. London* 1904, **n. sp.**

Challia **n. g.** near *Anataëlia*, p. 285, *C. fletcheri* **n. sp.**, China, p. 286, BURR, t. c.

Chelidura dilatata, copula and egg, XAMBEU, pp. 120, 121, *Ann. Soc. Linn. Lyon* l.

Chelisochea beelzebub to *Forficula*, characters amended, BURR, p. 322, *Tr. ent. Soc. London* 1904.

C. limbatus, Cameroons, BORG, p. 575, pl. xxvi, fig. 7, *Arkiv Zool.* i, **n. sp.**

Demogorgon longipennis, Tucuman, BORELLI, p. 4, *Boll. Mus. Torino* xix, No. 479, **n. sp.**

- Diplatys æthiops*, hab. ? , *occidentalis*, W. Indies, p. 280, *conradti*, Cameroons, viator, Madagascar, *siva*, India, p. 283, *croixi*, Malacca, p. 284, *greeni*, Ceylon, p. 285, BURR, Tr. ent. Soc. London 1904, **n. spp.**
- Forcipula quelchi*, Brit. Guiana, BURR, p. 289, t. c. **n. sp.**
- Forficula planicollis* ♂, p. 320, BURR, t. c.
- F. mikado*, Japan, p. 319, *ambigua*, *mogul*, p. 321, Darjiling, BURR, t. c. **n. spp.**
- Gonolabis* and *Gonolabidæ*, characters, BURR, pp. 293–295, t. c.
- Labia paraguayensis*, Sapucay, CAUDELL, p. 180, J. N. York Ent. Soc. xii ; *L. alluaudi*, *triangulata*, p. 297, *insularis*, p. 298, *forceps*, Madagascar, *paradoxa*, Ecuador, p. 299, BURR, Tr. ent. Soc. London 1904 : **n. spp.**
- Labidura dubroni*, p. 565, *karschi*, pl. xxvi, fig. 1, p. 566, Cameroons, BORG, Arkiv Zool. i, **n. spp.**
- Labidurodes nitidus*, Madagascar, BURR, p. 290, Tr. ent. Soc. London 1904, **n. sp.**
- Neolobophora bicolor*, Ecuador, BORELLI, p. 5, Boll. Mus. Torino xix, No. 475, **n. sp.**
- Odontopsalis* **n. g.** p. 315, *O. harmandi*, p. 316, *lewisi*, p. 317, **n. spp.**, Japan, BURR, Tr. ent. Soc. London 1904.
- Opisthocosmia micheli*, Abyssinia, p. 307, *erroris*, p. 308, *vicina*, Borneo, *nevilli*, p. 309, *brahma*, p. 310, India, *annandalei*, Malay States, p. 311, *shelfordi*, Sarawak, *temora*, Darjiling, p. 312, BURR, t. c. **n. spp.**
- Platylabia gestroi* ♀, BURR, p. 300, t. c.
- P. camerunensis*, p. 570, pl. xxvi, fig. 4, *bihastata*, fig. 5, p. 571, Cameroons, BORG, Arkiv Zool. i, **n. spp.**
- Pyragra paraguayensis*, Asuncion, BORELLI, p. 1, Boll. Mus. Torino xix, No. 479, **n. sp.**
- Sparatta bongiana*, Cameroons, BORG, pl. xxvi, fig. 3, Arkiv Zool. i ; *S. w. signata*, Mexico, BURR, p. 302, Tr. ent. Soc. London 1904 : **n. spp.**
- Spongiphora assiniensis* ♂, BURR, p. 295, t. c.
- S. geayi*, Abyssinia, id. l. c. ; *S. ochracea*, Cameroons, BORG, p. 569, pl. xxvi, fig. 6, Arkiv Zool. i ; *S. vicina*, Paraguay, BORELLI, p. 6, Boll. Mus. Torino xix, No. 479 : **n. spp.**
- Tomopygia* **n. g.** type *Cylindrogaster abnormis*, p. 287, *T. sinensis* **n. sp.**, Pekin, p. 288, BURR, Tr. ent. Soc. London 1904.

BLATTIDÆ and HEMIMERIDÆ.

[Cf. ADELUNG (11, 12), AGNUS (17), BORG (155), CAUDELL (255), NAVÁS (975), REHN (1128, 1135, 1138), RILEY (1173), REITZENSTEIN (1157), SCUDDER & COCKERELL (1267), SELLARDS (1269, 1270), STERZEL (1345), TEPPER (1370), WASSILIEFF (1488).]

General Catalogue, KIRBY (806A).

Morphology of head of *Blatta*, RILEY (1173).

Salivary glands of *P. orientalis*, LEBEDEFF (866).

Palæozoic *Blattidæ*, see Palæoentomology.

AGNUS states that *Palæoblattina douvillei* is a Trilobite, not a *Blattid*, Naturaliste 1904, p. 80.

Anaplecta platycephala, Queensland, REHN, p. 542, P. U. S. Mus. xxvii, **n. sp.**

Blatta senecta, S. Africa, REHN, p. 554, t. c. **n. sp.**

Blattella germanica injuring books, BRITTON, p. 215, Rep. Connecticut exp. Stat. 1904, pl. iii b.

Calotampra pedisequa, Siam, REHN, p. 547, P. U. S. Mus. xxvii, **n. sp.**

Chorisoneura africana, Cameroons, BORG, p. 5, Bih. Svenska Ak. xxviii, Afd. iv, No. 10 ; *C. plocea*, S. Carolina, REHN, p. 164, Ent. News Philad. xv : **n. spp.**

- Deropeltis schweinfurthi* var., ADELUNG, p. 327, Annuaire Mus. St. Petersb. viii.
- D. gabonica*, W. Africa, REHN, p. 556, P. U. S. Mus. xxvii; *D. kachovskii*, p. 319, pl. xx, fig. 6, *pallidipennis*, p. 327, Abyssinia, ADELUNG, t. c.; *D. tullbergi*, Cameroons, BORG, p. 16, pl. ii, fig. 6, Bih. Svenska Ak. xxviii, No. 10 : **n. spp.**
- Dipeltis*, a fossil cockroach, SELLARDS, p. 309, Amer. J. Sci. xviii.
- Ectobia perspicillaris* and *livida*, variation and distinctions, ADELUNG, pp. 130–137, Horæ Soc. ent. Ross. xxxvii.
- E. duskei*, S. E. Europe, ADELUNG, p. 127, t. c.; *E. maori*, New Zealand, REHN, p. 541, P. U. S. xxvii : **n. spp.**
- Ellipsidion histrionicum*, Australia, REHN, p. 544, t. c. **n. sp.**
- Epitampra camerunensis*, p. 8, pl. i, fig. 3, *electa*, p. 10, fig. 4, *infinita*, p. 11, fig. 1, *sjostedti*, p. 12, fig. 5, *pallida*, p. 13, fig. 6, *minuta*, p. 14, fig. 2, Cameroons, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10; *E. excelsa*, Himalaya, NAVÁS, p. 131, Bol. Soc. Aragon. iii; *E. trongana*, p. 548, *moloch*, p. 549, Siam, REHN, P. U. S. Mus. xxvii : **n. spp.**
- Eustegasta parva*, Cameroons, BORG, p. 31, Bih. Svenska Ak. Afd. iv, No. 10, **n. sp.**
- Gyna aurivillii*, p. 20, pl. ii, fig. 5, *oblonga*, p. 21, fig. 1, Cameroons, BORG, t. c. **n. spp.**
- Heterogamia gestroyana* var. *n. fulvopicta*, ADELUNG, p. 329, pl. xx, fig. 15, Annuaire Mus. St. Petersb. viii.
- Homœogamia subdiaphana*, New Mexico, SCUDDER, p. 19, pl. v, fig. 3, P. Davenport Ac. ix, **n. sp.**
- Isoniscus n. g.* near *Zetobora*, p. 27, *I. sjostedti* **n. sp.**, Cameroons, p. 28, pl. ii, fig. 3, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10.
- Kakerlac schæfferi*, Texas, REHN, p. 72, Psyche xi, **n. sp.**
- Mallatoblatta brachyptera*, Abyssinia, ADELUNG, p. 303, pl. xx, fig. 13, Annuaire Mus. St. Petersb. viii **n. sp.**
- Opistoplatia plicata*, Himalaya, NAVÁS, p. 130, Bol. Soc. Aragon. iii, **n. sp.**
- Oxyhaloa saussurei*, Cameroons, BORG, p. 29, pl. ii, fig. 2, Bih. Svenska Ak. xxviii, Afd. iv, No. 10; *O. nilotica*, Abyssinia, ADELUNG, p. 334, pl. xx, fig. 9, Annuaire Mus. St. Petersb. viii : **n. spp.**
- Panchlora stolata*, p. 23, pl. i, fig. 7, *camerunensis*, p. 24, Cameroons, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10, **n. spp.**
- Panesthia cetrifera*, Australia, REHN, p. 559, P. U. S. Mus. xxvii, **n. sp.**
- Periplaneta lebedinskii*, Abyssinia, ADELUNG, p. 305, Annuaire Mus. St. Petersb. viii; *P. basedowi*, S. Australia, TEPPER, p. 162, pl. xxxii, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Pilema thoracica*, habits, DISTANT, p. 97, *Ins. transvaal.* i.
- Proscratea bilineata*, Philippines, NAVÁS, p. 135, Bol. Soc. Aragon. iii, **n. sp.**
- Pseudoderopeltis discrepans*, p. 312, pl. xx, fig. 14, *gildessa*, p. 314, fig. 4, *saussurei*, p. 316, fig. 5, Abyssinia, ADELUNG, Annuaire Mus. St. Petersb. viii, **n. spp.**
- Rhcnoda desidiosa*, Siam, REHN, p. 552, P. U. S. Mus. xxvii, **n. spp.**
- Stylopyga flavilatera* var. *n. castanea*, ADELUNG, p. 309, Annuaire Mus. St. Petersb. viii.
- Temnopteryx deropeltiformis* and *Ischnoptera uhleriana*, habits, CAUDELL, p. 78, P. ent. Soc. Washington vi.
- Theganopteryx nitida*, Cameroons, BORG, p. 4, pl. i, fig. 8, Bih. Svenska Ak. xxviii, Afd. iv, No. 10, **n. sp.**
- Thyrsochera tessellata*, Siam, REHN, p. 545, P. U. S. Mus. xxvii, **n. sp.**

MANTIDÆ.

[Cf. CAUDELL (255), CESNOLA (256B), KIRBY (804), NAVÁS (975), REHN (1129, 1136), TEPPER (1370), WERNER (1509), WILLIAMS (1530).]

General Catalogue, KIRBY (806A).

Habits and ootheca of *Gongylus gongyloides*, WILLIAMS, Tr. ent. Soc. London 1904, pp. 125-137.

Acanthops tuberculata ♀, REHN, p. 570, P. U. S. Mus. xxvii.

Carvilia costalis, Abyssinia, KIRBY, p. 85, Ann. Nat. Hist. xiii, **n. sp.**

Centromantis **n. g.** for part of *Eremiaphila*, **n. spp.** named but not described, WERNER, p. 404, Anz. Ak. Wiss. xxvii.

Hapalopeza maculata, Ceylon, KIRBY, p. 84, Ann. Nat. Hist. xiii, **n. sp.**

Harpagonyx carlottæ, Costa Rica, REHN, p. 568, P. U. S. Mus. xxvii, **n. sp.**

Heterochæta orientalis, E. Africa, KIRBY, p. 87, Ann. Nat. Hist. xiii, **n. sp.**

Humbertiella ocularis ♂, KIRBY, p. 82, t. c.

H. ? brunneri, Lombok, KIRBY, p. 83, t. c. **n. sp.**

Mantis religiosa in N. France, VUILLEMIN, pp. 27-29, Feuille Natural. xxxv; *M. religiosa*, value of dimorphic colour, CESNOLA, Biometrika iii, p. 58.

Oxyopsis **n. n.** for *Oxyops* SAUSS., CAUDELL, p. 184, J. N. York Ent. Soc. xii.

Paramusonia **n. n.** for *Musonia* SAUSS. & Z., REHN, p. 567, P. U. S. Mus. xxvii.

Photina gracilipes, Para?, KIRBY, p. 86, Ann. Nat. Hist. xiii, **n. sp.**

Polyspilota elegans, Himalaya, NAVÁS, p. 132, Bol. Soc. Aragon. iii, **n. sp.**

Pseudochæta **n. g.** p. 87, for *P. strachani* **n. sp.**, Lagos, p. 88, KIRBY, Ann. Nat. Hist. xiii.

Pseudomantis pulchellus, S. Australia, TEPPER, p. 163, Tr. R. Soc. S. Austral. xxviii, **n. sp.**

Pseudomiopteryx infusca ♀, REHN, p. 566, P. U. S. Mus. xxvii.

Pyrgomantis jonesi, W. Africa, KIRBY, p. 83, Ann. Nat. Hist. xiii, **n. sp.**

Sphendale robusta, Nepal, KIRBY, p. 86, t. c. **n. sp.**

Stagmatoptera typhon, Nicaragua, REHN, p. 107, Canad. Ent. xxxvi; *S. insatiabilis*, Costa Rica, REHN, p. 572, P. U. S. Mus. xxvii: **n. spp.**

Stagmomantis theophila, Costa Rica, REHN, p. 563, t. c. **n. sp.**

Theopompa westwoodi, W. Africa, KIRBY, p. 81, Ann. Nat. Hist. xiii, **n. sp.**

Vates townsendi, Mexico, REHN, p. 573, P. U. S. Mus. xxvii, **n. sp.**

PHASMIDÆ.

[Cf. CAUDELL (251, 255), KIRBY (805), REHN (1130, 1131), SCUDDER & COCKERELL (1267).]

Note on classification, with new subfamilies, KIRBY, pp. 372, etc., Ann. Nat. Hist. xiii.

Remarks on classification of *Phasmidæ*, REHN, p. 107, P. Ac. Philad. xvi.

General Catalogue, KIRBY (806A).

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Aplopus cytherea ♀, REHN, p. 63, t. c.
A. similis, Swan isld., p. 65, *achalus*, Porto Rico, p. 68, REHN, t. c. **n. spp.**
Arrhideox apalamnus, Obi, REHN, p. 85, t. c. **n. sp.**
Aruanoidea aruana ♂ and varr., REHN, p. 79, t. c.
Bacillus coloradus, pl. i, fig. 4, p. 21, SCUDDER & COCKERELL, P. Davenport Ac. ix.
Bacteria, *ferula* is type, p. 61, *B. cubensis* ♀, p. 62, REHN, P. Ac. Philad. lvi; *B. tridens* Burm. to *Pseudosermyle*, REHN, p. 51, t. c.
Bactricia ridleyi, Singapore, KIRBY, p. 429, Ann. Nat. Hist. xiii, **n. sp.**
Bactrododema and *Pulophus*, REHN, p. 70, P. Ac. Philad. lvi.
Bacunculus stramineus, New Mexico, SCUDDER, p. 20, pl. i, fig. 1, P. Davenport Ac. ix; *B. dubia*, Paraguay, CAUDELL, p. 186, J. N. York Ent. Soc. xii : **n. spp.**
Bostra incompta, p. 57, *remiformis*, p. 58, Costa Rica, REHN, P. Ac. Philad. lvi; *B. jaliscensis*, Mexico, REHN, p. 514, t. c. : **n. spp.**
Calvisia maculicollis Westw. (as *Phasma*) = *atrosignata* Br., REHN, p. 72, t. c.
C. maculata, Penang, KIRBY, p. 435, Ann. Nat. Hist. xiii, **n. sp.**
Carausius bractus, Siam, p. 42, *mammatus*, p. 44, *obiensis*, p. 46, Obi, REHN, P. Ac. Philad. lvi, **n. spp.**
Ceratisceus **n. g.** *Clitumninae*, *C. laticeps* **n. sp.**, Paraguay, CAUDELL, p. 188, J. N. York Ent. Soc. xii.
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Datames æqualis, Obi, REHN, p. 89, t. c. **n. sp.**
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Eurycantha willeyi (= *horrida* Sharp nec Boisd.) New Britain, *portentosa*, Rossel isld., p. 442, *sifia*, Thursday isld., p. 443, KIRBY, t. c. **n. spp.**
Eurycnema magnifica, New Guinea, p. 439, *viridissima*, N. Australia, p. 440, KIRBY, t. c. **n. spp.**
Haaniella **n. n.** for *Heteropteryx*, Haan nec Gray, KIRBY, p. 444, t. c.
Haplopus eadæne, characters, cuts, CAUDELL, p. 950, P. U. S. Mus. xxvii.
Heliastus sumichrasti var. *n. rosea*, CAUDELL, p. 951, t. c.
Heteronemia ignava, Costa Rica, REHN, p. 54, P. Ac. Philad. lvi, **n. sp.**
Ignacia **n. g.** for *Pseudophasma* Bol. nec Kirb., REHN, p. 95, t. c.;
I. appendiculata, Nauta, KIRBY, p. 446, Ann. Nat. Hist. xiii, **n. sp.**
Lonchodes Gray = (*Dirippus* Stål), KIRBY, p. 373, Ann. Nat. Hist. xiii.
L.? *viridis*, Tonkin, KIRBY, p. 373, t. c. **n. sp.**
Macella caulodes, Siam, REHN, p. 80, P. Ac. Philad. lvi, **n. sp.**
Marmessoidea phluctainoides referred to *Arrhideox*, KIRBY, p. 438, Ann. Nat. Hist. xiii.
M. phluctainoides, Japan, REHN, p. 73, P. Ac. Philad. lvi, **n. sp.**
Myronides ashmeadi, Siam, REHN, p. 38, t. c. **n. sp.**
Necrosia, *N. roscipennis* to be type, KIRBY, p. 436, Ann. Nat. Hist. xiii,
N. tonkinensis, Tonkin, id. p. 437, t. c. **n. sp.**
Neohirasea **n. g.** for *Parapachymorpha japonica*, REHN, p. 84, P. Ac. Philad. lvi.
Oncotophasma **n. g.** for part of *Bostra*, REHN, p. 59, t. c.
Oreophates **n. g.** near *Heteronemia* for *Bacteria peruana* Sauss., REHN, p. 56, t. c.
Orxines, *xiphias* Westw. is type, REHN, p. 71, t. c.
Oxyartes lamellatus, Tonkin, KIRBY, p. 374, Ann. Nat. Hist. xiii, **n. sp.**
Olycyphides iridescens, Trinidad, KIRBY, p. 445, t. c. **n. sp.**
Orthonecrosia **n. n.** for *Necrosia* Brunn., with *O. pulcherrima*, Borneo, p. 436, *ruficeps*, Solomon islds., p. 437, **n. spp.**, KIRBY, t. c.
Paradeptynia **n. g.** near *Baculum*, *P. fosteri* **n. sp.**, Paraguay, CAUDELL, p. 187, J. N. York Ent. Soc. xii.
Phænotharos **n. g.** for *Lopaphus struthioneus* Westw., KIRBY, p. 433, Ann. Nat. Hist. xiii.

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Phraortes mikado, Japan, REHN, p. 40, P. Ac. Philad. lvi, **n. sp.**
Phyllium scythe and *pulchrifolium*, variation and distinction, REHN, p. 106, t. c.
Planudes crenulipes, Costa Rica, REHN, t. c. **n. sp.**
Promachus? *latus*, p. 375, *bicolor*, p. 376, Tonkin, KIRBY, Ann. Nat. Hist. xiii, **n. spp.**
Pseudophasma phæton, p. 95, *cryptochlore*, p. 98, Costa Rica, REHN, P. Ac. Philad. lvi; *P. inca*, Peru, p. 447, *cambridgei*, p. 448, Santarem, KIRBY, Ann. Nat. Hist. xiii : **n. spp.**
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Sipyloidea pæciptera, Obi, REHN, p. 77, t. c. **n. sp.**
Sosibia peninsularis, Penang, KIRBY, p. 434, Ann. Nat. Hist. xiii, **n. sp.**
Stælonchodes n. g. (*Lonchodes* pars), p. 372, *S. gracillimus n. sp.*, Tonkin, p. 373, KIRBY, t. c.
Stratocles multilineatus, p. 91, *costaricensis*, p. 93, Costa Rica, REHN, P. Ac. Philad. lvi, **n. spp.**
Tersomia n. g. Bacteriinae, p. 431, for *T. brasiliensis n. sp.*, Iguarassu, p. 432, KIRBY, Ann. Nat. Hist. xiii.
Xerosoma glyptomerion, Costa Rica, REHN, p. 101, P. Ac. Philad. lvi, **n. sp.**

GRYLLIDÆ.

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 Phagocytic organs in *Gryllidæ*, DAWYDOFF (356).
 Spermatogenesis, peculiar, *Gryllus*, VOINOV (1460).
Ectatoderus borealis, New Mexico, pl. iv, fig. 4, p. 58, SCUDDER, P. Davenport Ac. ix, **n. sp.**
Myrmecophila acervorum ♂, CSIKI, pp. 85, 88, Allatt. Kozl. Magyar. Tars. iii; *M. acervorum, ochracea*, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.
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N. griseus, p. 182, *angusticollis*, p. 186, Ontario, WALKER, Canad. Ent. xxxvi; *N. brevicaudus*, Colorado, BRUNER, p. 57, Bull. Exp. Stat. Colorado 94 : **n. spp.**
Æcanthus niveus, natural history, HOUGHTON, pp. 57–61, Ent. News Philad. xv.
Paranemobius schauinslandi, pl. xxxii, figg. 1–4, p. 567, ALFKEN, Zool. Jahrb. Syst. xix.
Thamnoscirtus cæruleus, Mexico, REHN, p. 548, P. Ac. Philad. lvi, **n. sp.**

LOCUSTIDÆ or TETTIGONIIDÆ.

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Anabrus simplex, habits, GILLETTE, pp. 321–324, pl. xix, Ent. News Philad. xv.

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ACRIDIIDÆ.

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- Acantholobus* **n. g.** p. 131, for part of *Criotettix* Bol., *A. miliarius cuneatus* var. **n.**, p. 133, HANCOCK, Spolia Zeylan. ii.
- Achurum sumichrasti*, pl. i, fig. 6, p. 34, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
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- Æolophilus crassus*, New Mexico and Mexico, SCUDDER, p. 42, P. Davenport Ac. ix, **n. sp.**
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- Amblytropidia mysteca*, pl. i, fig. 14, p. 66, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- A. magna*, Mexico, p. 63, *trinitatis*, S. America, p. 65, *costaricensis*, Nicaragua, p. 66, *inegnita*, p. 67, *elongata*, p. 68, Mexico, BRUNER, t. c. **n. spp.**
- Amphitornus ornatus*, pl. i, fig. 13, p. 58, BRUNER, t. c.
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- Apterotettix* **n. g.** *A. obtusus* **n. sp.**, Ceylon, HANCOCK, p. 140, Spolia Zeylan. ii.
- Arphia canora*, New Mexico, REHN, p. 564, P. Ac. Philad. lvi; *A. truculenta*, Mexico, REHN, p. 522, t. c. : **n. spp.**
- Boopedon hoagi*, p. 519, *gracile*, p. 520, Mexico, REHN, t. c.; *B. fuscum*, Arizona, p. 96, *savannarum*, Nebraska, p. 97, *diabolicum*, pl. i, fig. 1, *flaviventris*, Mexico, p. 98, BRUNER, Biol. Centr.-Amer. Orthopt. ii : **n. spp.**
- Boötettix argentatus*, pl. i, fig. 24, p. 52, BRUNER, t. c.
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- Calamaecis* **n. g.** near *Orthacris*, *C. clendoni* **n. sp.**, Mexico, REHN, p. 529, P. Ac. Philad. lvi.
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- C. abyssinicus*, p. 97, Africa, *brevis*, Kurrachee, p. 99, *lameerei*, p. 100, *occidentalis*, p. 104, *gabonicus*, p. 105, W. Africa, *rollini*, Boma Sundi, *bloyeti*, Kondoia, p. 106, *varelai*, E. Africa, *marshalli*, Salisbury, p. 107, BOLÍVAR, t. c. **n. spp.**
- Cladonotus latiramus*, Ceylon, HANCOCK, p. 114, pl. i, fig. 1, Spolia Zeylan. ii, **n. sp.**

- Conozoa acuminata*, p. 32, pl. ii, fig. 4, *corrugata*, p. 33, *melleola*, fig. 2, *picturata*, p. 34, New Mexico, SCUDDER, P. Davenport Ac. ix, **n. spp.**
- Coryphistes cyanopteroides*, p. 164, *serratus*, p. 165, *nigroconspersus*, p. 166, S. Australia, TEPPER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Criotettix spinilobus*, Ceylon, HANCOCK, p. 129, *Spolia Zeylan.* ii, **n. sp.**
- Cuculligera flexuosa* var. *n. azurea*, NAVÁS, p. 195, Bol. Soc. Aragon. iii.
- C. capucina*, Spain, NAVÁS, p. 193, t. c. **n. sp.**
- Dactylotum histricum*, Mexico, REHN, p. 539, P. Ac. Philad. lvi, **n. sp.**
- Dasyleurotettix* **n. g.** near *Diotarus*, *D. curriei* **n. sp.**, Liberia, REHN, p. 658, t. c.
- Deltonotus* **n. g.** *Cladonotinae*. *D. tectiformis* **n. sp.**, Ceylon, HANCOCK, p. 111, pl. i, fig. 2, *Spolia Zeylan.* ii.
- Dichromorpha mexicana*, pl. i, fig. 18, *longipennis*, Mexico, p. 87, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Encoptolophus coloradensis*, Fort Collins, BRUNER, p. 58, Bull. Exp. Stat. Colorado 94, **n. sp.**
- Eotettix pusillus*, *palustris*, N. America, MORSE, p. 7, Psyche xi, **n. spp.**
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- Eritettix brachypterus*, Mexico, BRUNER, p. 53, Biol. Centr.-Amer. Orthopt. ii, **n. sp.**
- Erucius magnificus* (= *vitreus* Brunn.), Labuan, REHN, p. 674, P. Ac. Philad. 1904, **n. sp.**
- Euparatettix* **n. g.** *E. parvus* **n. sp.**, Ceylon, HANCOCK, p. 145, *Spolia Zeylan.* ii.
- Eupedetes* **n. g.** near *Eritettix*, p. 24, *carinatus* **n. sp.**, New Mexico, pl. i, fig. 2, p. 25, SCUDDER, P. Davenport Ac. ix; *E.*, descr. reproduced, Biol. Centr.-Amer. Orthopt. ii, p. 54.
- Gesonía zonocera*, Philippines, NAVÁS, p. 136, Bol. Soc. Aragon. iii, **n. sp.**
- Gomphocerus meridionalis*, Mexico, BRUNER, p. 93, Biol. Centr.-Amer. Orthopt. ii, **n. sp.**
- Hedotettix gracilis abortus* var. *n.*, HANCOCK, p. 151, *Spolia Zeylan.* ii.
- H. attenuatus*, Ceylon, id. l. c. **n. sp.**
- Hesperotettix gillettei*, *coloradensis*, Colorado, BRUNER, p. 61, Bull. Exp. Stat. Colorado 94, **n. spp.**
- Humpatella severini*, Congo, BOLÍVAR, p. 438, Bol. Soc. espan. iv, **n. sp.**
- Hybusa reedi*, Chile, REHN, p. 679, P. Ac. Philad. 1904, **n. sp.**
- Lamellitettix* **n. g.** near *Mazarredia*, p. 125, *L. acutus* **n. sp.**, Ceylon, p. 126, pl. ii, fig. 6, HANCOCK, *Spolia Zeylan.* ii.
- Laufferia* **n. g.** for *Ochrophlebia chloronota*, BOLÍVAR, p. 445, Bol. Soc. espan. iv.
- Lepteia* **subg. n.** of *Pyrgomorphella* for *P. debilis* Finot, BOLÍVAR, p. 457, t. c.
- Leuconotus* **n. g.** *L. biolleyi* **n. sp.**, Costa Rica, BRUNER, p. 57, Biol. Centr.-Amer. Orthopt. ii.
- Linoceratium* **n. g.** near *Orphulella*, *L. boucardi* **n. sp.**, Central America & Colombia, BRUNER, p. 84, t. c.
- Loxilobus* **n. g.** near *Criotettix*, *L. acutus*, pl. i, fig. 3, p. 134, *rugosus*, p. 135, **n. spp.**, Ceylon, HANCOCK, *Spolia Zeylan.* ii.
- Macherocera obscura*, p. 50, *magna*, *pacifica*, p. 51, Mexico, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Maura venusta*, p. 320, *modesta*, p. 322, *marshalli*, p. 323, *selysi*, p. 325, Africa, BOLÍVAR, Bol. Soc. espan. iv, **n. spp.**
- Mazarredia aptera*, Labuan, REHN, p. 663, P. Ac. Philad. 1904, **n. sp.**
- Melanoplus flabellifer*, *brevipennis* var. *n.*, BRUNER, p. 65, Bull. Exp. Stat. Colorado 94.
- M. symmetricus*, *divergens*, p. 8, *deceptus*, *similis*, p. 9, *celatus*, *sylvestris*,

- carnegiei*, p. 10, *strumosus*, *tribulus*, p. 11, *devius*, *decoratus*, p. 12, *australis*, p. 13, N. America, MORSE, Psyche xi; *M. stoneri*, New Jersey, REHN, p. 85, Ent. News Philad. xv; *M. sanguineus*, p. 63, *tristis*, p. 64, *dimidipennis*, p. 66, Colorado, BRUNER, Bull. Exp. Stat. Colorado 94; *M. scitus*, p. 44, *neomexicanus*, p. 46, *bicoloratus*, p. 48, *quadratus*, p. 49, New Mexico, SCUDDER, P. Davenport Ac. ix: **n. spp.**
- Melanotettix* **n. g.** near *Stenobothrus*, p. 80, *M. dibelonus*, pl. i, fig. 16, **n. sp.**, Mexico, p. 91, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Mermiria texana*, pl. i, fig. 19, *maculipennis*, fig. 9, BRUNER, p. 38, t. c.
- Mestobregma thomasi* **n. n.** for *cinctum* Br. nec Thomas, CAUDELL, p. 125, P. ent. Soc. Washington vi.
- Mitraria pontificalis* Liberia, REHN, p. 664, P. Ac. Philad. 1904, **n. sp.**
- Monistria ligata*, Sydney, BOLÍVAR, p. 436, Bol. Soc. espan. iv, **n. sp.**
- Napaia gracilis*, pl. i, fig. 2, p. 90, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Ochrophlebia proxima*, S. Africa, BOLÍVAR, p. 444, Bol. Soc. espan. iv, **n. sp.**
- Ochrophlegma* **subg. n.** of *Ochrophlebia*, BOLÍVAR, p. 443, t. c.
- Ochrotettix* **n. g.** *O. salinus* **n. sp.**, Mexico, pl. i, figg. 4, 5, BRUNER, p. 56, Biol. Centr.-Amer. Orthopt. ii.
- Opeia imperfecta*, Texas and Mexico, p. 59, *pallida*, *mexicana*, pl. i, fig. 15, p. 60, *palmeri*, *lineata*, p. 61, Mexico, BRUNER, t. c. **n. spp.**
- Orchetypus ocreatus*, Congo, REHN, p. 670, P. Ac. Philad. 1904, **n. sp.**
- Orphula azteca*, pl. i, fig. 3, pp. 73, 74, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- O. meridionalis*, Costa Rica, id. p. 73, t. c. **n. sp.**
- Orphulella graninea*, Arizona, p. 78, *meridionalis*, p. 81, *costaricensis*, Costa Rica, *prominula* p. 82, *robusta*, p. 83, Mexico, BRUNER, t. c. **n. spp.**
- Papagoa* **n. g.** *Tryxalineæ*, *P. arizonensis* **n. sp.**, Arizona, BRUNER, p. 42, t. c.
- Parachlæbata* **n. g.** near *Orphulella*, p. 83, *P. pratensis* **n. sp.**, Cuba, p. 84, pl. i, fig. 10, BRUNER, t. c.
- Parasphena dubia*, p. 440, *picticeps*, p. 441, Africa, BOLÍVAR, Bol. Soc. espan. iv, **n. spp.**
- Paropomala pallida* p. 40, *dissimilis*, p. 41, North America, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Perixerus variabilis*, Mexico, REHN, p. 541, P. Ac. Philad. lvi, **n. sp.**
- Phaneroturis* **n. g.** *P. cupido*, pl. i, fig. 17, **n. sp.**, Guatemala, p. 88, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Phymateus*, tabulation of species, with varr. **n.**, BOLÍVAR, pp. 403–418, Bol. Soc. espan. iv.
- P. pulcherrimus*, Abyssinia, p. 408, *coralliferus*, Transvaal, p. 410, *puniceus*, p. 415, *cardinalis*, p. 416, Madagascar, BOLÍVAR, t. c. **n. spp.**
- Phyteumas* **n. g.** for *Phymateus olivaceus* Karsch, BOLÍVAR, p. 402, t. c.
- Platehippius* **subg. n.** of *Platystolus*, for *ustulatus* Ramb., NAVÁS, p. 197, Bol. Soc. Aragon. iii.
- Platystolus*, cf. *Platehippius*.
- P. obrius*, Spain, NAVÁS, p. 196, Bol. Soc. Aragon. iii, **n. sp.**
- Plectrotettix calidus*, p. 101, *excellsus*, *macneilli*, pl. i, fig. 12, p. 102, Mexico, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Plerisca* **n. g.** *Pyrgomorphinæ*, *peringueyi* **n. sp.**, Cape Good Hope, p. 442, BOLÍVAR, Bol. Soc. espan. iv.
- Pæcilocerus tessellatus*, India, BOLÍVAR, p. 433, t. c. **n. sp.**
- Psoloessa buddiana*, pl. i, fig. 8, p. 104, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Pyrgomorpha inæqualipennis*, hab. ?, *cylindrica*, Angola, p. 453, *capensis*, S. Africa, p. 455, BOLÍVAR, t. c. **n. spp.**
- Pyrgomorphella sphenarioides*, Abyssinia, *madecassa*, Madagascar, BOLÍVAR, p. 458, Bol. Soc. espan. ii, **n. spp.**
- Rubellia brancsiki*, Madagascar, BOLÍVAR, p. 437, t. c. **n. sp.**

- Scelimena logani*, Ceylon, aquatic, HANCOCK, p. 120, pl. i, fig. 5, *Spolia* Zeylan. ii; *S. abbotti*, Siam, REHN, p. 660, P. Ac. Philad. 1904 : **n. spp.**
- Schistocerca philippina*, Mindanao, NAVÁS, p. 137, Bol. Soc. Aragon. iii; *S. peruviana*, Peru, LYNCH ARRIBÁLZAGA, p. 2, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Seyllina physopoda*, Himalaya, NAVÁS, p. 133, Bol. Soc. Aragon. Ci. nat. iii, **n. sp.**
- Silvitettix* **n. g.** p. 55, *S. communis* **n. sp.**, Costa Rica, p. 56, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Sinaloa brevispinis*, Mexico, REHN, p. 534, P. Ac. Philad. lvi, **n. sp.**
- Sisantum* **n. g.** near *Orphulella*, *S. notochloris* **n. sp.**, pl. i, fig. 11, p. 69, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Spharagemon saxatile* var. **n. planum**, MORSE, p. 13, Psyche xi.
- Sphenariinae*, revision, BOLÍVAR, pp. 306-328, Bol. Soc. espan. iv.
- Stenacris* Walk. = (*Arnilia* Stål), REHN & HEBARD, p. 787, P. Ac. Philad. 1904.
- Syrbula pacifica*, p. 44, *robusta*, Mexico, *modesta*, Arizona, p. 46, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Tæniopoda tamaulipensis*, Mexico, REHN, p. 531, P. Ac. Philad. lvi, **n. sp.**
- Tanita* **n. g.** p. 446, for *Pyrgomorpha* part, with *T. longiceps*, p. 447, *loosi*, p. 449, *ferrierei*, *purpurea*, p. 450, **n. spp.**, Africa, BOLÍVAR, Bol. Soc. espan. iv.
- Tapesia* **n. n.** for *Petasia*, p. 311, *T. producta*, p. 383, *karschi*, p. 315, Africa, **n. spp.**, *T. spumans* varr. **n. pp.** 316-318, BOLÍVAR, t. c.
- Taphronota calliparea* var. **n. poultoni**, p. 397, BOLÍVAR, t. c.
- T. dimidiata*, Abyssinia, p. 397, *merceti*, p. 398, *amaranthina*, p. 400, W. Africa, BOLÍVAR, t. c. **n. spp.**
- Tenuitarsus* **n. g.** *Chrotogoninae*, *revoili* **n. sp.**, Somali land, BOLÍVAR, p. 90, t. c.
- Tetanorhynchus biastatus*, p. 677, *smithi*, p. 678, Brazil, REHN, P. Ac. Philad. 1904, **n. spp.**
- Tettigidia pulchella*, British Guiana, REHN, p. 669, t. c. **n. sp.**
- Tettix atypicalis*, p. 142, with var. *ceylonus*, p. 143, Ceylon, HANCOCK, *Spolia* Zeylan. ii, **n. sp.**
- Thyripton* **n. g.** p. 68, *T. vitripenne* **n. sp.**, Mexico, p. 69, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Trimerotropis inconspicua*, Colorado, BRUNER, p. 59, Bull. Exp. Stat. Colorado 94; *T. rubripes*, New Mexico, REHN, p. 568, P. Ac. Philad. lvi; *T. cyanea*, pl. ii, fig. 3, p. 36, *alliciens*, fig. 1, p. 37, New Mexico, SCUDDER, P. Davenport Ac. ix : **n. spp.**
- Zapata* **n. g.** near *Aulocara*, *Z. brevipennis*, pl. i, fig. 22, **n. sp.**, Mexico, BRUNER, p. 103, Biol. Centr.-Amer. Orthopt. ii.

XIV. ECHINODERMA.

BY

F. A. BATHER.

CONTENTS.

	Page
Introduction	3
Corrigenda in Previous Records	6
I.—TITLES	7
II.—BIOLOGY.	
A. Evolution.	
i General Principles	31
ii Relations of Echinoderma	31
iii Phylogenies of smaller groups	31
B. Morphology.	
i Anatomy	32
(This is divided into Classes a—h, as under IV, and each Class is subdivided as follows):—	
1. General Accounts.	
2. Symmetries.	
3. Homologies of Classes.	
4. Skeletal tissue or Stereom.	
5. Skeletal anatomy.	
6. Hydrocoel and associated cavities, Respiratory organs.	
7. Coelom and other Body-cavities and their Contents.	
8. Digestive system. Cuvierian organs.	
9. Nervous systems and sense-organs.	
10. Mesodermal tissues (exc. skeletal).	
11. Axial organ or Ovoid gland.	
12. Generative organs and gonads.	
ii Variation :—	
a. In form	34
b. In form and surface-characters	34
c. In colour	34
d. Meristic (1 & 2)	34
e. Abnormalities	34

	Page
iii Secondary Sexual Characters :—	
a. Differences of Form or Structure	34
b. Differences of colour	34
c. Protection of young	34
c. Physiology :—	
i General	34
ii Circulation	35
iii Respiration	35
iv Alimentation and Digestion	35
v Excretion and its Products	35
vi Sensation	35
vii Miscellanea and Experimental	35
d. Bionomics :—	
i General Accounts (Vacant)	
ii Special habits	35
iii Habitat (in Classes a—h, as under IV)	35
iv Feeding (ditto) (ditto)	35
v Defence and Protection (Vacant)	
vi Locomotion	35
vii Autotomy and Regeneration (in Classes a—h)	36
viii Parasites and Commensals (ditto)	36
ix Echinoderms as Food	36
x Echinoderms in Geological Aspect	36
e. Miscellaneous :—	
i Research and Instruction (a. Preservation. b. Methods of research. c. Museum exhibits and Collections. d. Instruction)	37
ii Economics	37
iii Bibliography	37
iv Historical, Popular notions, &c.	37
f. Auxology :—	
i General principles (Vacant)	
ii General accounts	37
iii Formation of Gonads	37
iv Oviposition, Fertilisation, Segmentation	37
v Larval stages	38
vi Organogeny, 1-12, as under II, B, i.	38
vii Post-larval growth-stages	38
viii Developmental mechanics and Experimental Embryology	38
(Under each of the above a—h indicate Classes as under IV.)	

III.—DISTRIBUTION.

A. Geographical :—

i General	39
ii Atlantic Ocean and adjacent Seas	40
iii Indian Ocean and adjacent Seas	40
iv Pacific Ocean and adjacent Seas	41
v Arctic Ocean and adjacent Seas	41
vi Antarctic Ocean and adjacent Seas	42

	Page
B. Geological :—	
i General	42
ii Cainozoic :—	
a. General	42
b. Pleistocene	42
c. Pleiocene	42
d. Meiocene	42
e. Oligocene	(Vacant)
f. Eocene	43
iii Mesozoic :—	
a. General	(Vacant)
b. Cretaceous (1. Upper. 2. Lower)	43
c. Jurassic (1. Upper. 2. Middle. 3. Lower)	45
d. Lias (including Rhaetic)	45
e. Trias	46
iv Palæozoic :—	
a. General	46
b. Permian	46
c. Permo-Carboniferous	46
d. Upper Carboniferous	46
e. Lower Carboniferous	46
f. Devonian	46
g. Silurian	46
h. Ordovician	47
k. Cambrian	(Vacant)
l. Pre-Cambrian	(Vacant)

IV.—SYSTEMATIC.

A. Echinoderma, general	47
B. Holothurioidea	47
C. Echinoidea	50
D. Asteroidea	74
E. Ophiuroidea	80
F. Crinoidea	87
G. Cystidea and Edrioasteroidea	93
H. Blastoidea	95
K. Incertæ Sedis	96

INTRODUCTION.

I. TITLES. The total 303 is thus made up: 1891, 1; 1892, 3; 1896, 2; 1898, 2; 1899, 2; 1900, 3; 1901, 10; 1902, 12; 1903, 27; 1904, 239; 1905, 2. The sudden decline in both the total and the number for the year is partly due to a change in the method of obtaining the titles, partly to the fact that longer working hours at the British Museum (Nat. Hist.) render it more difficult for members of the staff to utilize the library of that establishment. In these circumstances the task of copying titles, indexing names, and sorting slips has been mainly performed by Miss Grant, to whose intelligent care I am deeply indebted. Making further allowance for the usual deficiency, the following numbers of writings dealing with Echinoderms in the years 1891–1904 inclusive, prove a genuine increase in the annual output: 189, 171, 166, 155, 172, 219, 198, 230, 264, 318, 314, 289, 317, 240. That this has *not* been accompanied by increase in the length of the Record is clear from comparison of my predecessor's

1891 Record (devoting 91 pages to 186 papers and a few abstracts) with the 1902 Record (where 307 papers with many notes and abstracts are indexed in 88 pages). The length of a Record for a given year depends less on the number of titles than on the proportion of large monographs, and in such works 1904 was peculiarly rich.

II. BIOLOGY. The Echinoderm volume of DELAGE & HÉROUARD'S 'Traité de Zoologie concrète' (54) gives an admirable summary of the morphology, especially of living forms, the Phylum as a whole and each Class being described in terms of an ideal type. This method, though LAMBERT'S criticism of it is most just, forms a valuable complement to the evolutionary method adopted in the corresponding volume of Lankester's 'Treatise' (Zool. Rec. 1900, No. 19). There is, however, a chapter on phylogeny, in which the authors adopt as at least *ben trovato* the Pelmatozoic theory elaborated in that treatise. They add full accounts of the Physiology and Embryology of each extant Class. In a separate paper (121) HÉROUARD puts forth his own hypothesis of the origin of Echinoderms from a metamerically segmented Dipleuraea. A more elaborate speculation is started by E. MEYER (190): a typically segmented Annelid, taking to a half-sedentary, partly tubicolous life gives rise to the three groups of Prosopygia—Sipunculoidea, Phoronoidea, and Bryozoa; at an early stage in this history branched off the hypothetical *Astrelminthes*, of which the Dipleurula is the ontogenetic equivalent; these possessed a terminal anus, an anterior pair of nephridia with internal openings near the diaphragm, a crown of tentacles with ciliated grooves round the terminal mouth, and a pair of symmetric diaphragm-sacks as precursors of the ambulacral system. SIMROTH (256) dismissing all other theories as fantastic, and brushing aside palaeontology, considers that the Echinoderms are derived from their own parasites, the Myzostomes, in this way "dass je ein Darmblindsack in eine Sinnesknospe hineinwucherte und sich mit dieser verband. Das dürfte das ganze Geheimnis sein."

Anatomy.—A large number of important details, beautifully illustrated, are contributed by AGASSIZ (3) to our knowledge of the Echinoid test, principally in abyssal Spatangoids. Since this memoir suffers from the absence of an index, a list of the genera dealt with is given under III, A, iv. A similar assemblage is handled by DE MEJERE (57), but the structural features which appeal to him are so different that the two authors scarcely seem to treat of the same class of animals. The anatomy of the test also receives elucidation from MORTENSEN (194–195), who specially discusses the homologies of pedicellariae. TORNQUIST'S study of the apex in *Schizaster* (268) will help the classification of this difficult genus; I regret my inability to record his paper on Eocene fossils from Madagascar. The existence of an inner and outer series of plates in the ambulacrum of *Palaeodiscus*, as maintained by Sollas, is confirmed by SPENCER (264) who also confirms the views of Roemer, Meek, and Jaekel as to the structure of the food-groove in *Agelacriniidae*. The paper deserved better proof-reading than papers seem to get with our leading society.

Physiology, Bionomics, Auxology.—OESTERGREN (204) publishes an interesting note, and UEXKULL (274) a profound and fascinating study, of Ophiurid arm-movements. The reproduction of Starfish from isolated rays is convincingly proved by MONKS (193) & KELLOGG (139). SCHMIDT'S (246) exact description of the early stages in *Echinus* larva should be useful for comparison with experimental results, while DELAGE'S account (52) of *Asterias* larvae, though based on parthenogenetic individuals, contains facts of value to the morphologist, who will of course also read MACBRIDE (172) on *Ophiothrix*, and should glean something from the numerous descriptions of minute individuals and of growth-stages in various Echinoids which enrich the pages of AGASSIZ (3). Miss KLEM'S (142) criticism of Jackson & Jaggard's work on the growth of *Melonites* is not

immediately intelligible. Among papers on experimental embryology one cannot refrain from noting the beautiful experiments of GARBOWSKI (94) and the startling fact incidentally announced by JANSSENS (136) that all the experts at Naples, trying all methods on all manner of material for a whole breeding season could not get a solitary case of parthenogenesis.

III. DISTRIBUTION. The chief interest of the following papers is faunistic. On the Ophiurids collected by the 'M. Sars' GRIEG (106) bases an interesting discussion of the cold-water fauna of the North Sea and its limits, and deals in similar manner with the *Crinoidea* (107). CLARK (38) revises and describes the Echinoderm fauna of Woods Hole. KOEHLER's study of 'Siboga' Ophiurids (143) extends the range of many species and emphasizes the wide bathymetric limits of others. FOURTAU (83) gives an interesting account of the recent and Pleistocene Echinoid fauna of the Gulf of Suez, and draws conclusions as to its connections with the Indian Ocean and the Mediterranean.

ROWE (235) extends his zoning of the English Chalk to the Yorkshire coast which presents several remarkable features of Echinoderm distribution, e. g. *Zeuglopleurus rowei* in Marsupites zone, *Infulaster rostratus* from zone of *M. cortestudinarium* to that of *Actinocamax quadratus*, and *Cardiaster anachytis* from *M. coranguinum* to *A. quadratus* zone. The bionomics of Solenhofen Echinoderms are studied by WALTHER (281). FRAIPONT (85) publishes photographs of Echinoderms from the Black Marble of the Belgian Carboniferous, a fauna hitherto undescribed and unfortunately too ill preserved for satisfactory determination. *Hemiaster cubicus* has been largely quoted from Sinai, but in the collections at his disposal NEWTON (196) finds only *Linthia oblonga*.

IV. SYSTEMATIC. The classification of *Echinoderma* both recent and fossil, down to subgenera, given by DELAGE & HÉROUARD (54) is valuable as giving a more complete list of names than can be found in any existing work on the subject, with an index showing synonyms and even misprints. The adoption of such groups as *Palasteriidae* and *Euasteriidae*, or *Palophiuridae* and *Colophiuridae*, the separation of *Synapta* from all other Holothurians, and the division of Inadunate Crinoids into *Larviformida* and *Fistulida* are steps possibly warranted but certainly retrograde. The formation of Family names by the addition of *-inae* to the full name of a genus (e. g. *Ophiohelusinae*) accords neither with etymology nor the custom of systematists. These and similar vagaries of nomenclature, though indexed in this Record, are not emphasized as novelties. Under *Asteroidea*, however, the authors propose the new generic names *Echinodiscaster* for *Echinodiscus* Stürtz, and *Calvasterias* for *Calveria hystrix* [better known as *Korethraster hispidus*], while they mention *Goniodon*, as well as the Ophiurid *Astrodia*, now first indexed as new genera. The details of their classification of *Echinoidea* are largely due to MORTENSEN.

Miss KLEM's (142) bibliography and list of palaeozoic Echinoids is a useful aid to the memory, but should not be trusted implicitly. Among recent sea-urchins BELL (22) founds *Eobrissus*, a new Spatangoid. The memoir on Panamic deep-sea Echinoids by AGASSIZ (3) is less systematic than morphological; it contains a new genus, *Pilematechinus*, also *Centrocidaris*, a new subgenus of a genus not stated, and much condemnation of De Meijere & Mortensen. The latter (195) in describing Regular Echinoids collected in the Gulf of Siam, gives a fresh classification of the Subclass, and a most careful study of *Diadematidae* and *Temnopleuridae*; in the matter of new genera his restraint is commendable. His taxonomic methods are followed by DE MEIJERE (57), who describes new species of Echinoids and one new genus, *Selenechinus*, from the Malay Archipelago, and redescribes the interesting *Echinocorytidae* and *Pourtalesidae* introduced in his preliminary note; his summary of results is welcome to those who cannot stomach the details of spines and spicules. In describing new

species of *Plesiolampas* and *Hemiaster* from the Eocene of N. Nigeria, BATHER (18) considers the nature of the heteronomy more important for classification than the fascioles. P. DE LORIO (162) describes many species, new and old from Patagonia, among them a new Asteroid genus *Lahillea*, a name perilously close to *Lahillia* Cossmann 1899; also an Echinoid fauna from Honduras similar to that in the Comanche series of Texas; finally he believes that he has discovered the type-specimen of that contentious species *Scutella striatula* M. de Serres.

The type-specimens of many inadequately described or figured species of Ophiurids are redescribed by KOEHLER (144). Among 151 species of deep-sea Ophiurids collected by the 'Siboga,' the same author (143) finds 112 new species and the new genera *Ophiopallas*, *Ophiocirce*, *Ophiomoeris*, *Ophiocrates*, *Ophiomidas*, *Ophioleuce*, *Ophiochrysis*, *Ophiodoris*, *Ophiomytis*, and *Astrocharis*.

Following up the observations of Mortensen, GRIEG (107) shows the systematic value of genital pinnules and other small points in *Antedon*. American Crinoids of Devonian age are revised and described by Miss WOOD (291), who founds the new genera *Tripleurocrinus* and *Tylocrinus*. In a valuable study of various Devonian and Silurian Cystidea of N. America, SCHUCHERT (249) introduces the new genera *Tetracystis* and *Trimerocystis*; his discussion of *Camarocrinus* is the most convincing yet published.

The following table gives the numbers of the new names proposed, so far as can be ascertained from ordinary perusal of the works recorded.

	New genera	Altered generic names	New sub- genera	New species	Altered specific names	New varr.
Holothurioidea	0	0	0	7	0	0
Echinoidea	3	0	1	50	0	4
Asteroidea	2	2	0	9	0	0
Ophiuroidea	11	0	0	114	0	1
Crinoidea	2	0	0	32	1	8
Cystidea	2	0	0	11	0	1
Blastoidea	0	0	0	0	0	0
Total	20	2	1	223	1	14

CORRIGENDA in previous Records.

Record for 1894, vol. XXXI:—

p. 43. *Freyella spinosa*. For 'Soudan' read 'N.E. of C. Verd Is.'

Record for 1901, vol. XXXVIII:—

p. 10. No. 22. BEEDE, J. W. Reference should read "Tr. Kansas Ac. xvi, pp. 70-84 (June, 1899)."

p. 11. No. 36. BOESE, E. After "vertiente" insert "oriental."

Record for 1903, vol. XL:—

p. 32. No. 282. SAVIN, L. This is an abstract of SAVIN (247) Zool. Rec. 1902.

The Recorder is always glad to receive corrections, and would be specially grateful if Authors, Editors, or Publishers would occasionally enable him to remove the asterisk indicating that a work has not been seen.

Further personal remarks by the Recorder are placed in [].

I. TITLES.*

- ABDERHALDEN, E. See FUEHNER, H. (90).
1. ABRIC, P. A propos de la fécondation spermatozoidale et chimique et de la parthénogenèse. C.R. Soc. Biol. lvii, pp. 271, 272. (28 Oct.)
[II, F, viii.]
 - ACKERMANN, A. (2) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. ix, p. 839. (30 Dec. 1902.)
 2. ACLAND, H. D. On a new cave on the eastern side of Gibraltar. Quart. J. Geol. Soc. lx, pp. 30-36, 2 text-figg., pl. vi. (15 Feb.)
[III, B, ii, b.]
 3. AGASSIZ, A. The Panamic deep sea Echini (being No. 32 of Reports on an exploration...by the U. S. ss. "Albatross," during 1891...) Mem. Mus. Harvard, xxxi, x+246 pp. (5 blank), cxii pls., 319 text-figg. (Nov.) [II, A, iii : B, i, c, 2, 5 ; ii, c ; iii, a : c, vii : F, vi, c, 5 ; vii, c. III, A, i, ii, iv. IV, c.]
Abstract : in LUDWIG (166).
 - AIRAGHI, C. (2 & 3) Zool. Rec. 1903. Abstracts : by VINASSA, Geol. Centrbl. iv, p. 729 (1 Mar. 1904) & vi, p. 310 (15 Mar. 1905).
 4. ALBERT [HONORÉ CHARLES] (Prince de Monaco). Sur la 5^e campagne scientifique de la Princesse Alice II. C.R. Ac. Sci. cxxxviii, pp. 1398-1400. (June.) [III, A, ii.]
 5. ALBERT, F. Los perjuicios que causan las estrellas de mar a la pesquería. Act. Soc. Chili, xii, pp. 279-284. (Jan. 1903.) [II, E, ii.]
 6. ALBRECHT, E. Ueber die Bedeutung myelinogener Substanzen im Zellleben. Verh. Deutsch. path. Ges. vi, pp. 95-109. [II, F, iii, c.]
 7. AMI, H. M. Preliminary lists of the organic remains occurring in the various geological formations comprised in the map of the Ottawa district, including formations in the provinces of Quebec and Ontario, along the Ottawa River. Appendix to Report on the geology and natural resources of the area included in the map of the city of Ottawa and vicinity, by R. W. ELLS. Rep. Geol. Surv. Canada (n. s.), xii, pp. 49G-77G. (1901.) [III, B, iv, h.]
 8. —. Lists of fossils obtained from the several formations along the Ottawa River pertaining to the report on sheet No. 121, Quebec and Ontario (Grenville sheet). Appendix to Report on the geology of Argenteuil, Ottawa and part of Pontiac counties, &c., by R. W. ELLS. Rep. Geol. Surv. Canada (n. s.), xii, pp. 139J-143J. (1901.)
[III, B, iv, h.]
 9. ANDERSSON, K. A. ... "Brutpflege bei *Antedon hirsuta*"... [read before] Naturvetenskapliga Studentsällskapet, Upsala. Zool. Anz. xxvii, p. 662. (14 June.)
Preliminary to ANDERSSON (10).
 10. —. Brutpflege bei *Antedon hirsuta* Carpenter. Wiss. ergebn. Schwedisch. Südpolar Expedition 1901-1903. Bd. v, Lief. 1, 8 pp., ii pls. [II, B, i, f, 12 ; iii, c : F, iii, f ; iv, f ; vii, f.]
Abstract : in LUDWIG (166).

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

The Symbols in [] refer to the divisions of the Subject-Index, II, III, IV. Those referring to the Systematic portion [IV, A-K] are inserted only when some question of definite importance to the systematist is dealt with in the work. The names of the genera mentioned in any work can generally be gathered from the lists given under Distribution [III, A or B], and the species can then be traced by turning to Section IV. Only where this was not possible have names been inserted after the title.

11. ANDREWS, E. A. Notes on the fauna of Jamaica. Johns Hopkins Univ. Circ. xi, pp. 72-77. (April, 1892.) [II, F, iv. III, A, ii.]
12. [ANON.] A retrospect of palaeontology in the last forty years. Geol. Mag. (n. s.) dec. v, vol. i, pp. 49-56. (Feb.) [II, E, iv.]
- ARIOLA, V. (11) Zool. Rec. 1902. Also appeared as Boll. Mus. Genova, 1901, No. 111, pl. ix. (1901.) Abstract by H. LUDWIG, Zool. Centrbl. x, p. 78 (10 Feb. 1903).
13. —. La merogonia e l'ufficio del centrosoma nella fecondazione merogonica. Atti Soc. Ligustica, xv, pp. 40-50. (Mar.) [II, F, viii.]
14. ARMASCHEWSKY, P. Obshchaya gheologhicheskaya Karta Rossii. List 46-1 Poltava-Khar'kov-Oboyan. (Allgemeine geologische Karte von Russland. Blatt 46. Poltawa-Charkow-Obojan.) Trudui geol. Kom. xv, No. 1, vi+318 pp., 1 map. (1903.) [III, B, iii, b, 1.]
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II. BIOLOGY.

(A.) EVOLUTION.

- i. **General Principles** :—Vacant.
- ii. **Relations of Echinoderma** :—Morphology explained by descent from a *Dipleuraea* with preoral vesicle and 10 metameric segments, of which the posterior 5 pass forward and are applied to the anterior 5, forming the 'Pentastomaea'; HEROUARD (121).—Descent from a worm-like ancestor, already possessing rudiment of water-vascular system, general criticism of views of Semon (1888), Bütschli ('92), Seeliger ('93), Lang ('94), Bury ('95), Haeckel ('96), MacBride ('96), Bather (1900), and Perrier ('02); MEYER (190).—*Myzostoma asteriae* is of all organisms the nearest to the primitive Echinoderm, detailed comparison; SIMROTH (256).—Origin from pelagic worms, pelmatozoic theory criticised; PERRIER (211) p. 259.
- iii. **Phylogenies of smaller groups** :—Phylogeny of *Echinoderma*, general discussion of theories and acceptance of the Pelmatozoic theory as formulated by Bather; DELAGE (54) p. 431–437.—Primary Echinoderm larva derived from *Anomocystidae*, Hol. from *Amphoridea*, another branch of which leads to *Cyst.* & *Crin.*, from

Agelocystidae comè *Ast.* & *Oph.*, and from *Cystoblastidae* descend *Ech.*; HALLER (111A) p. 112.—*Ech.* derived from *Ast.*, and neither from *Edrioasteroidea*; SPENCER (264).—General relations of groups of *Ech.*; DOUVILLÉ (66) p. 72.—Anterior ambulacrum of Spatangoids, its gradual specialization (p. 217), Evolution of plastron in Spatangoids; AGASSIZ (3).—Origin of *Pourtalesidae*; DE MEIJERE (57) p. 157.—Evolution of apical system in *Schizaster*, this and *Linthia* derived from *Periaster*; TORNQUIST (268).

(B.) MORPHOLOGY.

i. Anatomy:—

a. *ECHINODERMA*.

1. General Accounts:—Mainly recent Echinoderms, with original diagr. *Ast.*, *Oph.*, *Crin.* arm-sections, pedicellariae, otocyst, *Asterias* dissect., *Ech.* section, &c.; HALLER (111A).—Anatomy of Echinoderm type (p. 1–19, pls. i–x) comparative (p. 417–427); DELAGE (54).
2. Symmetries:—Plant-like appearance and geometric regularity of certain Echinoderms due to sedentary life; LANG (149).
3. Homologies of Classes:—Vacant.
4. Skeletal tissue or Stereom:—Crystalline nature; DOUVILLÉ (66) p. 71.
- 5–8. Vacant.
9. Nervous system and Sense-organs:—General account with examples from *Ophiocoma*, *Echinus*, and *Holothuria*; ROY. COLL. SURGEONS (237).
- 10–12. Vacant.

b. *HOLOTHURIOIDEA*.

1. General Account; DELAGE (54), p. 274–303, pls. xxxvi–xl.
- 2–8. Vacant.
9. Nervous System and Sense-organs:—See II, B, i, a, 9.
- 10, 11. Vacant.
12. Genital System:—Cords of germinal cells in *Holothuria* homologous with genital cord of *Ast.* and axial organ of *Crin.*; POLARA (220).

c. *ECHINOIDEA*.

1. General Account; DELAGE (54), p. 160–201, pls. xxvi–xxxv.
2. Symmetries:—Shape of test in *Cidaridae*, orientation of pentagons; AGASSIZ (3) p. 1.—*Hemiaster* not bilaterally symmetrical; BATHER (18) p. 300.—Ditto *Linthia*; NEWTON (196).
3. Homologies:—Vacant.
4. Stereom:—Structure of radioles; COMBES (45).
5. Skeletal Anatomy:—Chief modifications in relation to mode of life; DOUVILLÉ (66) p. 72.—Morphology of Pourtalesid test discussed; DE MEIJERE (57) p. 157–171.—Ditto (p. 121), anal snout *Spatangoidea* (p. 148), apical system, *Solenidae* (p. 35); AGASSIZ (3).—Ditto, *Schizaster*; TORNQUIST (268).—Ambital plates lengthened in various Spatangoids, cf. *Melonites*; AGASSIZ (3) p. 184.—Interambulacrals, splitting of, *Astropyga* and *Chaetodiudema*; MORTENSEN (195) p. 25.—Plastron of *Pilematechinus* compared with that of *Offaster*, *Abatus*, *Cardiaster*, *Stegaster*, et al., amphisternal derived from meridosternal; AGASSIZ (3) p. 163.—Stereum, *Echinocorytidae* and *Spatangoidea*; DE MEIJERE (57) p. 153.—Heteronomy, *Spatangoidea*, *Pourtalesidae*, &c.; op. cit. p. 161: normal in *Hemiaster*, ancient in *Linthia*; BATHER (18) p. 298: explanation of phenomenon; LAMBERT in Review.—Ambulacra, types of struc-

ture; MORTENSEN (195) p. 42.—Ambulacral plates, jaw-apparatus, *Palaeodiscus*; SPENCER (264).—Tubercles, crenelation and perforation, classificatory value; MORTENSEN (195) p. 42.—Fascioles, migration and modification; BATHER (18) p. 298; AGASSIZ (3) p. 179; DE MEIJERE (57) p. 165, 241.

Pedicellariae,—origin from radioles; HALLER (111A) p. 126.—Tetradactylous, origin of; MORTENSEN (194).—Origin of globiferæ (p. 33), no *Ech.* pedicellariae derived from or homologous with radioles (p. 39); MORTENSEN (195).—In many spp.; DE MEIJERE (57) passim, main results p. 244–248.—In *Toxopneustes pileolus*; HERDMAN (120) p. 140.—Podia, giant with large disc, their skeleton described, in *Micropyga*; DE MEIJERE (57) p. 60, 243.

- 6. Hydrocoel &c.:—See last entry.
- 7, 8. Vacant.
- 9. Nervous System:—See II, B, i, a, 9.
- 10, 11. Vacant.
- 12. Generative System:—Vide II, F, iii.—Chemical constitution of ovum in *Strongylocentrotus*; BERTOLO (26).

d. ASTEROIDEA.

- 1. General Account; DELAGE (54) p. 32–63, pls. xi–xvii.
 - 2–4. Vacant.
 - 5. Skeletal Anatomy:—Pedicellariae may in some cases be transformed radioles, and in so far are not homologous with *Ech.* pedicellariae; MORTENSEN (195) p. 39.
 - 6–12. Vacant.
- #### e. OPHIUROIDEA.
- 1. General Account; DELAGE (54) p. 106–136, pls. xviii–xxv.
 - 2–4. Vacant.
 - 5 & 10. Musculature and arm-skeleton, *Ophioglypha*; UEXKUELL (274).
 - 6–8. Vacant.
 - 9. Nervous System:—See II, B, i, a, 9.
 - 10. Mesodermal tissues (exc. skeletal):—Vide e, 5.
 - 11. Vacant.
 - 12. Vide II, F, iii.—Gonads in arms of *Astroscema ferox*; KOEHLER (143) p. 163.

f. CRINOIDEA.

- 1. General Account:—As type of *Pelmatozoa*, based on *Antedon bifida*; DELAGE (54) p. 339–364, pls. xli–l.—Of Class [applicable only to recent forms]; HAMANN (112) p. 1415.
- 2–4. Vacant.
- 5. Skeleton:—Cirrals, syzygies, genital pinnules in *Antedon* spp.; GRIEG (107) p. 24.—IBB in a Senonian *Isoer.*, first discovery in the genus; JAEKEL (139) [but see BIGOT, 1899].—Stem, BB., and union of Br. in *Bathyr.*; GRIEG (107) p. 8.—Loboliths,—nature and function; FRIČ (88): Structure in *Camaroer.*; SCHUCHERT (249): explained by hollow roots of various *Crin.*, perhaps contained gonads; JAEKEL (132).
- 6–11. Vacant.
- 12. Gonads:—*Metacr.*; SPERRY (265): *Antedon hirsuta*; ANDERSSON (10).

g. CYSTIDEA.

- 1. General Account; DELAGE (54) p. 403–405.
- 5. Skeletal anatomy:—Plates of subvective groove in *Agelacr.* and *Lepidodiscus*; SPENCER (264).

h. BLASTOIDEA.

General Account; DELAGE (54) p. 396–400.

ii. Variation :—

Determination of, vide II, F, viii; VERNON (276).

- a. In form:—size, &c., in *Melonites* due to local conditions; KLEM (142) p. 7.
- b. In form and surface characters:—Common in Echinoderms, esp. *Ophiothrix* and *Astropecten*; BELL in HERDMAN (120) p. 149, 150.—Size, number of rays, of madreporites, of mouths, of ani, position of exit of gonads, in *Phaturia*; MONKS (193).—Spines and scales, *Ophiactis abyssicola*, *Ophiothrix fragilis*; GRIEG (106).
- c. In colour:—Colour in life,—many Echinoderms at Woods Hole (see list III, A, ii); CLARK (38): deep-sea *Ech.* (see list III, A, iv), with coloured drawings of *Phormosoma hispidum*, *Pourtalesia tanneri*, and *Cystechinus loveni*; AGASSIZ (3) passim, pls. A, B: various *Ech.*, its specific value (see list III, A, iii, iv); MORTENSEN (195): *Diadema*, *Stomopneustes*, *Toxopneustes*, *Culcita*; HERDMAN (120): various *Oph.* (see III, A, iii); KOEHLER (144): *Ophiura albida*, *Ophiocten*; GRIEG (106): spp. *Antedon* and *Actinometra*; CHADWICK (35).—In life and spirit, various Echinoderms from Patagonia (see III, A, ii); LORIOI (162).—(In spirit?) of numerous spp. of *Ech.* dredged by Siboga (see III, A, iii); DE MEIJERE (57).—In spirit, various *Oph.* (see III, A, iii); KOEHLER (143).
- d. Meristic variation :—
 1. Variation from pentamerous symmetry:—6 rays, *Ophiocera* sp.; KOEHLER (143) p. 154.—5 madreporites, but 1 stone-canal, *Gorgonocephalus*; CLARK (38) p. 562.
 2. Reduplication or absence of parts :—suppression of a gonopore in *Cidaris elegans*; DE MEIJERE (57) p. 24.—*Metacr.*; SPERRY (265).—Position of syzygies spp. *Antedon* and *Actinometra*; CHADWICK (35).—Number of IBr. in *Dolatocr.*; ROWLEY in GREENE (105) p. 191.
- e. Abnormalities:—*Pseudodiadema*; LISSAJOUS (153) p. 159, 160.—Apex, *Schizaster*; TORNQUIST (268) p. 387.—2 gonopores in madreporite, *Stephanocidaris*; MORTENSEN (195).—Fusion of rays, *Ctenodiscus*; MICHAÏLOVSKIJ (192) p. 171.—Ray bifurcate, *Ophiomusium*; KOEHLER (143) p. 64.—*Megistocr.* (p. 62), *Tylocr.* (p. 68), *Dolatocr.* (p. 72, 78), *Gennaeocr.* (p. 80), and remarks (p. 82); WOOD (291).—*Pseudocr.* (p. 230): *Coelocystis*, plates vertically divided (p. 248); SCHUCHERT (249).—Inferradial in *Pentremites*, and extra plate in radial circlet in *Nucleocr.*; ROWLEY in GREENE (105) p. 190.

iii. Secondary Sexual Characters :—

- a. Differences of Form or Structure:—*Porocidaris milleri*; AGASSIZ (3) p. 27.
- b. Differences of Colour:—? *Echinus angulosus*; BELL (22A).
- c. Protection of Young:—*Cycethra verrucosa*; MEISSNER (186).—*Antedon hirsuta* on cirri; ANDERSSON (10).—Complete account; LUDWIG (164): Addendum; (165).

(C.) PHYSIOLOGY.

- i. General :—*Echinoderma* in general (p. 19–23), comparative (p. 427), *Hol.* (p. 303–309), *Ech.* (p. 201–203), *Ast.* (p. 63–68), *Oph.* (p. 136–139), *Crin.* (p. 364–366); DELAGE (54).—Exhaustive account of chemical physiology, esp. blood, respiration, nutrition, excretion, poisons, muscles, stereom, pigments, gonads, and conditions of existence; FUERTH (91).

- ii. **Circulation**:—Regulated by osmosis in *Strongylocentrotus*, *Sphaerechinus*, *Spatangus*, *Holothuria*, and *Stichopus*; HENRI (116).
- iii. **Respiration**:—Vide c, i.
- iv. **Alimentation and Digestion**:—Ferments, *Holothuria*, *Spatangus*, *Asterias*, last strongest; CLERC (41).
- v. **Excretion and its Products**:—Pigments,—nature of; MANDOU (182) p. 370: products of metabolism without selective value; HARGITT (113) p. 143.
Colour, see II, B, ii, c.
- vi. **Sensation**:—Discussion of consciousness in action of Echinoderms; LUKAS (167).—Sense-organs on podia, *Ophiopholis aculeata*; ÖSTERGREN (204) p. 564.—Sensibility of spines, reaction to light, *Ophioglypha*; UEXKUELL (274) p. 4.
- vii. **Miscellanea and Experimental Physiology**:—Functions of podia, *Oph.* (vide II, D, vi); ÖSTERGREN (204).—Movement of stomach-muscle, *Ophioglypha*; UEXKUELL (274) p. 4.—Solution of lime in test of deep-sea *Ech.*, *Urechinus*, *Cystechinus*, *Pilematechinus*; AGASSIZ (3) p. 153, 159, 166.—Freezing-point of body-fluid in *Echinus* and *Cucumaria*; DEKHUYZEN (51).—Effect of artificial sea-water on *Asterias*; TRUE (270).—Poisoning *Ophioglypha* by slate bottom; UEXKUELL (274) p. 3.
Amount of copper in *Asterias* and *Stichopus*; DUBOIS (72).—Arsenic in *Pedicellaster*, *Strongylocentrotus*, *Stichopus*; BERTRAND (27).—Chemical constitution of ovum, *Strongylocentrotus*; BERTOLO (26).

(D.) BIONOMICS.

- i. **General Accounts**:—Vacant.
- ii. **Special habits**:—Boring,—in coral; FINCKH (78) p. 141: of *Echinostrephus molare* induces spiral twist in actinal radioles; HERDMAN (120) p. 139.
- iii. **Habitat**:—(a) Various spp.,—in N. polar basin (see list III, A, v); MICHAÏLOVSKIÏ (192): Dröbaksund (vide III, A, ii); KIAER (140): near Plymouth; MAR. BIOL. ASS. (184).—*Hol.*, *Ech.*, *Oph.*, atoll of Minikoi; GARDINER (95) p. 44, 47, 338. (c) *Ech.*:—Influence on classification; DOUVILLÉ (66) p. 72.—*Stomopneustes variolaris*, *Echinostrephus molare*; HERDMAN (120).—*Psammechinus verruculatus*, *Gymnechinus pumilio*, & *Echinoneus cyclostomus* on *Lithothamnion*; DEMEIJERE (57) p. 89, 92, 140.—Boring in platform of coral reef; FINCKH (78) p. 141. (e) *Oph.*:—Change of, acts as poison; UEXKUELL (274) p. 3. (f) *Crin.*:—Diverse views as to *Holopus* and *Cyathidium*; HENNIG (115) p. 55; RAVN (223).
- iv. **Feeding**:—(b) *Hol.*, not on coral or seaweed, but on microscopic organisms in coarse sand; GARDINER (95) p. 338: FINCKH (78) p. 141.—Diatoms in gut of *Holothuria* at Civita Vecchia; LANZI (151). (c) *Ech.* same as *Hol.* (supra); GARDINER (95). (e) *Ophioglypha*; UEXKUELL (274) p. 3, 12.—*Astrophytida*, on plankton; ÖSTERGREN (204) p. 564.
- v. **Defence and Protection**:—Vacant (but see next entry).
- vi. **Locomotion**:—Resting position and movements of *Ophioglypha* (p. 4), its locomotion (p. 6), turning over (p. 10), protective (p. 15); UEXKUELL (274).—Podia serve for fixation and so assist locomotion by flexure of rays, in *Ophiocoma*, *Amphiura*, *Ophiopholis*, and *Ophiura*, so also in *Hol.*; ÖSTERGREN (204).—*Geocoma* and *Saccocoma*, their tracks in Solnhofen Plattenkalk; WALTHER (281) p. 200, 201 and fig.

- vii. **Autotomy and Regeneration**:—(a) See under heading 'Physiologie' passim; DELAGE (54). (d) Illustrated by photographs of specimens in collection F. D. Snyder, Ashtabula, O.; McCURE (173).—Regen. of complete starfish from ray broken off at a distance from the body in *Linckia diplax* and *L. pacifica*; KELLOGG (139).—Autot. of rays, also regen. of new rays from rays cut off at a distance from the disc, in *Phataria*; MONKS (193). (e) Autot. *Ophioderma*, *Ophioglypha*; UEXKUELL (274) p. 13.—Regen. of rays in *Ophioglypha* is quicker the more rays are removed, except when all are removed; ZELENY (297).—Loss of dorsal covering of disc; BELL in HERDMAN (120) p. 148. (f) Regen. viscera, *Antedon indica*; CHADWICK (35).—Loss of arms without regen., *Megistocr.*; WOOD (291) p. 66.—Regen. arms, *Barycr.* and *Platy-cr.*; WHITFIELD (286).
- viii. **Parasites and Commensals**:—(b) *Cystobia*, gregarine, spp. parasitic in *Holothuria* and *Cucumaria*; WOODCOCK (292).—*Tetrarhynchus*, cestode, in holothurian, ? *Molpadia*; SHIPLEY (253) p. 147.—Numerous mollusca in gut of *Stichopus* et al.; KIAER (140) p. 70, 71.—*Synapticola*, lamellibranch in *Synapta inhaerens* and comparison with similar cases; MALARD (180).—*Pinnotheres villosissimus*, brachyuran in cloaca of *Muelleria lecanora*; DOFLEIN (64) p. 126. (c) *Anophrys*, ciliate protozoon in intestine of *Strongylocentrotus*, *Sphaerechinus*, and *Arbacia*; DI MAURO (63).—*Siphonostoma* and *Scalesetosus*, polychaetes on *Echinus*; *Montacuta*, mollusc on *Spatangus*; *Tellimya*, mollusc on *Echinocardium*; MAR. BIOL. ASS. (184) p. 210, 211.—*Ichthyonema* (olim *Echinonema* Gemm. non v. Linst.) nematode in perivisceral cavity of *Echinus esculentus*; GEMMILL & LINSTOW (99): GEMMILL (98).—Parasitic mollusc?, in radiole, *Astropyga radiata* (p. 22), gastropod and crab on *Salmacis bicolor* (p. 66), crab on *Toxopneustes pileolus* (p. 120); MORTENSEN (195).—*Arete*, alpheid on oral surface of *Heterocentrotus*; COUTIERE (48). (e) *Mucronalia*, gastropod on *Ophiothrix deposita* and *O. crassispina*; KOEHLER (143) p. 146, 147.
- ix. **Echinoderms as Food**:—Of man, *Cucumaria frondosa*; CLARK (38) p. 548.—Of Genoese, *Ech.*; PARONA (207) p. 384.—Of fish, *Echinarachnius*, *Ophiopholis*, *Amphiura*, and *Hol.*; CLARK (38) p. 549.—Of crabs or fish, *Tetrodiscus* (= *Echinodiscus*) *auritus*; FOURTAU (83) p. 425.
- x. **Echinoderms in Geological Aspect**:—Coral reefs degraded by *Hol.*; GARDINER (95) p. 166, 338: by *Ech.*, but not *Hol.*; FINCKH (78) p. 141.—*Ech.* holes in the reef at Mamangúape (p. 53, pl. xliii), at Pernambuco (p. 62, pl. 1), at Itaparica, Bahia (p. 247, pl. lxxix), at Maceio due to *Echinometra subangularis* (p. 271); BRANNER (32).
Ech. fossils in flint; BATHER (17).—Impregnation of *Ech.* tests in chalk with crystalline silica; MEUNIER (189).
Echinocardium cordatum in lumps of shelly limest. and sandst. now forming in Danish waters; NORDMANN (200).—"Echinoderm conglomerate," chiefly remaniée *Ech.* from top of Cretaceous; GRÖNWALL (109) p. 28 & (108) p. 428.—Plates of *Ech.* in Lower Cretaceous reef-rock; CAYEUX (34) p. 96, 97.—*Crin.* limest.,—Lower and Mid. Lias, important in Swiss and French Alps; LORY (163).—Bathonian; LEUTHARDT (152).—Composition, mode of occurrence in Bajocian, Mont d'Or; RICHE (228) passim and pl. B; SCHARDT (243) p. 304.—Lenticles 80 cm. thick of *Crin.* pinnulars; MAIRE (178).—*Sphaeronis* as rock former; HOLM (126) p. 47.
Association of sand and *Crin.* stems in St. Louis beds and modern Atlantic; UDDEN (272) p. 391.

(E.) MISCELLANEOUS.

i. Research and Instruction:—

- a. Preservation:—Killing and preservation of Echinoderms; CLARK (38) p. 549.—Collecting, especially on coral-reefs, and preservation in natural position of *Hol.*, *Ech.*, *Crin.*; PLATE (219).—*Hol.*, killed by methyl blue; MADER (175) p. 208: Preservation expanded; TULLBERG (271).
- b. Methods of research:—Toxic action of ordinary distilled water on ova of *Arbacia*, but artificial sea-water made with purer distilled water is better than natural sea-water, perhaps owing to absence of ammonia; LYON (170).—Rearing *Ast.* larvae; DELAGE (52): on culture of alga, *Chlorella*; HÉROUARD (122).—Preparation of complete series *Ech.* larvae 10–46 hours; SCHMIDT (246).—Methods of identifying Echinoderms, esp. *Hol.*; CLARK (38) p. 549.—Examination of *Ast.* and *Ech.* for arsenic; BERTRAND (27).
- c. Museum Exhibits and Collections:—Museum label, *Ech.* in flint; BATHER (17).—Nantes Museum, Gourdon coll. Pyrenean *Ech.* Senonian and Eocene (qq.v.); GOURDON (102).—List of type-specimens of *Ech.* and *Crin.* in museums and private collections of Grenoble; REBOUL (224).—*Echinoderma* in Naturhist. Mus. Hamburg, and works dealing therewith; KRAEPELIN (146).—Fossil Echinoderms added to U. S. Nat. Mus.; SCHUCHERT (247, 248).
- d. Instruction:—Text-books,—WEYSSE (284) pp. 85–104: advanced; DELAGE (54): comp. anat.; HALLER (111A).

ii. Economics:—see II, D, ix, Echinoderms as food of man.—Of Woods Hole Echinoderms; CLARK (38) p. 548.—*Ast.* damage to fisheries, summary; ALBERT (5).iii. Bibliography:—General selected; DELAGE (54) p. 442–460.—Palaeozoic *Ech.*; KLEM (142) p. 76–97.—*Crin.* [*? Pelmatozoa*] begun; HAMANN (112) p. 1420.—Echinoderms in Rumpf's "Rariteitkamer"; MARTENS (185) p. 131.—Literature for 1892 abstracted; BERGMANN (25): for 1904; LUDWIG (166).iv. Historical, Popular notions, &c.:—Summary of papers on fossil Echinoderms in Geol. Mag. 1864–1903; ANON. (12) p. 52–53.—History of research on brood-protection; LUDWIG (164).—Names applied to Class *Crin.*; HAMANN (112) p. 1419.—The fate of G. Troost's collection and the MS. of his monograph on Crinoids of Tennessee (p. 219), history of *Camarocr.* = *Loxololithus* (p. 254); SCHUCHERT (249).—'Abou-Chokah,' father of thorns, Bedouin name for *Diadema setosum* (p. 413), 'Halaouan' for *Echinometra lucunter* (p. 416); FOURTAU (83).

(F.) AUXOLOGY.

i. General Principles:—Vacant.

ii. General Accounts:—Echinoderma in general (p. 23–30, pls. vii–x) comparative (p. 428–431), *Hol.* (p. 310–318), *Ech.* (p. 203–215), *Ast.* (p. 68–82), *Oph.* (p. 139–144), *Crin.* (p. 366–375); DELAGE (54).iii. Formation of Gonads:—Myelin in nucleus and nucleolus of *Ech.* ovum; ALBRECHT (6) p. 99, 108.—Plasmodia in ovaries, *Arbacia*, *Echinus*, *Asteracanthion*; JANSSENS (136) p. 263.—Spermatozoa, *Ophiura*, *Ophiotrix*, *Echinus*; RETZIUS (226) p. 27–28, pl. xii.—Structure and formation of ova, *Antedon*; ANDERSSON (10).iv. Oviposition, Fertilisation, and Segmentation:—Breeding period,—*Ech.* *Oph.* *Ast.* *Hol.* Jamaica; ANDREWS (11) p. 76: *Ophiotrix*, *Ophiura* at la Hougue; MALARD (179) p. 192.—Copu-

lation (?) and fertilisation of ova, *Antedon hirsuta*; ANDERSSON (10).—Fertilisation due to entrance of water into ovum, not to sperm; SCHUECKING (250).—Fertilisation and segmentation, general discussion; HARTOG (114).—Rhythmic production of CO₂ from sperm-ova of *Arbacia* during cleavage, also resistance to KCN; LYON (169).—Electrical potential developing ova of Turtle and *Fundulus*, changes compared with rhythms previously observed in Echinoderm ova; HYDE (130).—Outer protoplasmic layer, nature of mitosis in *Echinus*, *Strongylocentrotus*, *Ophiothrix*; ZIEGLER (298).—Morula and gastrula to first rudiment of coelom, mesenchyme cells becoming skeletogenous, *Ophiothrix*; MACBRIDE (172).—Blastula to Pluteus of *Echinus microtuberculatus* exact time-stages, studied by sections; SCHMIDT (246).

v. **Larval Stages**:—(a) Generalised diagr.; HALLER (111A) p. 110.—Rearing larvae; HÉROUARD (122). (d) Parthenogenetic larvae of *Asterias* reared to early Brachiolaria stage and described; DELAGE (52). (f) Fixed stage, *Antedon*; GRIEG (107) p. 19, 37.

vi. **Organogeny**:—(c) *Echinoidea*:—

5. Development of coronal plates, *Arbacia*; AGASSIZ (3) p. 54.

vii. **Post-larval Growth-stages**:—(b) Growth-changes,—*Thyone briareus*; CLARK (38) p. 568: *Cucumaria*; MICHAÏLOVSKIJ (192). (c) Growth-changes,—test of *Cidaridae*, shape, anal system, coronal plates, peristomial plates, tubercles (p. 1–18), *Dorocidaris panamensis* (p. 21, 22), *Porocidaris cobosi* (p. 30), *Salenia miliaris* (p. 42), *Arbacia* (p. 54), *Dermatodiadema* (p. 60, 64), *Echinothuridae* (p. 75), *Phormosoma* (p. 86, 109), *Asthenosoma* (p. 113), *Brissopsis* (p. 190); AGASSIZ (3): *Mellita pentapora*; CLARK (38) p. 565.—Young,—of *Cidaris elegans*, descr. (p. 25), *Phormosoma* (p. 28), *Podocidaris* (p. 68); DE MEIJERE (57): *Hemiaster*, *Arbacia*; LORIOL (162): *Stephanocidaris* (p. 8), *Salmacis* (p. 71, 73), Protechinus stage, *Phormosoma* (p. 54 & fig.); MORTENSEN (195).—Growth in *Melonitidae*, criticism of JACKSON & JAGGER; KLEM (142) p. 2. (d) Growth-stages,—*Leptoptychaster*; MICHAÏLOVSKIJ (192).—Growth of *Asterias rubens* in given time; KIAER (140) p. 74.—Brepheic *Asterias*, absence of specific distinction; CLARK (38) p. 551. (e) Association of different aged *Ophiura* in warm areas but not in cold; GRIEG (106) p. 22.—Growth-changes,—*Gorgonocephalus lincki*; GRIEG (106) p. 38: *Ophiopleura*; MICHAÏLOVSKIJ (192). (f) Stalked young, *Antedon hirsuta*; ANDERSSON (10).—Young *Megistocr.*; WOOD (291) p. 59. (g) Growth-stages in *Pseudocr.* (p. 236) in *Sphaerocystis* (p. 250, 252); SCHUCHERT (249).

viii. **Developmental mechanics and Experimental Embryology**:—Degeneration of ovules, *Strongylocentrotus*; DUBUISSON (73).—Asters in *Toxopneustes* and *Echinurachnius*, observations by N. YATSU, reply to PETRUNKEWITSCH; WILSON (288).—Mechanism of epithelium-formation illustrated from *Ech.* blastulae; ZUR STRASSEN (300).

Giant and monster larvae produced by fusion of one or more morulae with plasmodia, *Arbacia*; JANSSENS (136).—Blastomeres of *Psammechinus* cut apart, stained *intra vitam*, and reunited to form morulae of new individuality, which proceed with development; GARBOWSKI (94).—Abnormal development often due to nature of gonads, not to environment; VIGUIER (279).—Fertilisation, normal or artificial, produces difference between osmotic pressure and surface-tension, equilibrium restored by cleavage; SPAULDING (262).

The determination of variation, account of Author's experiments on *Ech.* sperm-ova, (163) Zool. Rec. 1895, (214) Zool. Rec. 1898, (240) Zool.

Rec. 1899, (337 & 338) Zool. Rec. 1900 ; VERNON (276) p. 105, 168, 190, 217, 229, 296.—Vitality of the ovum, reaction to external stimuli, summary of recent work ; LOISEL (160).—Susceptibility to heat and cold of *Arbacia* sperm-ovum and production of carbon dioxide, vary in rhythms ; LYON (171).—Ovulase, i.e. extract of spermatozoa of *Strongylocentrotus lividus* and *Echinus esculentus*, action on ova ; PIERI (218).—Poison-effect of alcohols on *Psammechinus* ova ; FUEHNER (89).—Influence of alcohols of differing strengths on *Psammechinus* and *Strongylocentrotus* development ; FUEHNER (90).—Action of potassium cyanide on *Ech.* ovum ; JACKSON (131).—Antagonistic poisons and development of *Ech.* and *Ast.* embryos ; SOLLMANN (259).—Effect of anisotonic solutions and saponin on ova of *Asterias* and *Arbacia* ; SOLLMANN (260).—Influence of alkaline and acid sea-water on fertilization of *Ech.* ova ; LOEB (159).—Immunity of *Ech.* sperm-ova to ether, H Cl, K Cl, and Na Cl increases up to segmentation ; SPAULDING (263).—Solutions in which *Ech.* ova can develop ; LOEB (157).—Role of Chlorine, OH, Natrium, Kalium, Calcium, SO₄, Carbonate, and Magnesium in developing larvae *Ech.* and *Ast.* ; HERBST (117).

Hybridization :—*Strongylocentrotus purpuratus* ♀ × *Asterias capitata* ♂, *A. ochracea* ♂, *Pycnopodia spuria* ♂, *Asterina* ♂, and an *Ophiurid* ♂, in normal, alkaline, and acid sea-water, development of hybrids ; LOEB (155, 158, 159) : Note on the preceding ; ABRIC (1).—*Strongylocentrotus* ♂ × *Sphaerechinus* ♀, and vice versa ; VIGUIER (277).—BOVERI (31) maintains the observations and conclusions of his paper (23) Zool. Rec. 1903 against the criticism of DRIESCH (69) Zool. Rec. 1903.

Artificial Parthenogenesis :—Critical summary of recent work ; BOHN (29) : reply ; VIGUIER (278).—General discussion of results on *Ech.* ovum ; KOSTANECKI (145) p. 86 : ditto from standpoint of chemical physiology ; FUERTH (91) p. 602.—*Strongylocentrotus*, and *Psammechinus*, relation of chromosomes ; PETRUNKEWITSCH (217).—Induced by drying ova, in *Asterias rubens* ; GIARD (100),—carbonic acid after shaking, ova of *Strongylocentrotus* ; DELAGE (53).—Carbonic acid larvae of *Asterias* reared ; DELAGE (52).—Induced in *Arbacia* ova by concentration of sea-water, description of mitosis and following stages ; HUNTER (128).—Vitelline membrane produced on unfertilised ova of *Echinus* and *Strongylocentrotus* by traces of silver salts and followed by incomplete segmentation ; HERBST (119).—Difference between *Ast.* and *Ech.*, membrane formation and cytolysis in *Ech.*, nature of stimulus ; LOEB (156).—Merogony, experiments on *Arbacia pustulosa* and *Sphaerechinus granularis* ; ARIOLA (13).—*Asterias* ; GARBOWSKI (93).—Total failure of all experiments at Naples, Jan.—June 1903 ; JANSSENS (136) p. 250.

III. DISTRIBUTION*.

A. GEOGRAPHICAL.

- i. **General** :—Distrib. of *Ech.* in general, its methods, ocean transport ; AGASSIZ (3) p. 219.—Distrib. of larvae as bearing on distrib. of adults ; GARDINER (96).—The bathymetric and geographic distrib. of each genus is given by DELAGE (54).—Distrib. of brood-protecting Echinoderms ; LUDWIG (164).—Distrib. of genera of *Ech.* continued from 1903 ; MEISSNER in HAMANN (112).—Abundance of *Crin.* individuals in northern seas contrasted with paucity of genera and spp., vice versa in southern seas ; GRIEG (107).

* For the species found, refer to generic names under IV.

ii. Atlantic Ocean and adjacent Seas:—

North Sea, Cold-water area, *Oph.* fauna discussed, also other Echinoderms (pp. 5–15) *Oph.* collected “M. Sars” here and Norway coasts, also Arctic to Spitzbergen, distrib. of each sp. discussed, *Ophiopleura*, *Ophiura*, *Ophiocten*, *Amphiura*, *Amphilepis*, *Ophiactis*, *Ophiopus*, *Ophiopholis*, *Ophiacantha*, *Ophiothrix*, *Ophiocolex*, *Asteronyx*, *Gorgonocephalus*, *Bathybiaster*, *Pourtalesia*; GRIEG (106).—General discussion of *Crin.* fauna, esp. of Norway coasts, distrib. of each sp., *Bathyer.*, *Rhizocr.*, *Antedon*; GRIEG (107).

Norway,—Trondhjem, *Psolus* n. sp.; ØSTERGREN (203).—Dröbakssund, *Stichopus*, *Mesothuria*, *Strongylocentrotus*, *Amphidetus*, *Asterias*, *Astropecten*, *Archaster*, *Ophioglypha*, *Ophiopholis*, *Ophiothrix*; KIAER (140).

British coasts,—Ayrshire, common Echinoderms; SMITH (257).—Firth of Clyde, numbers of each species; MCINTOSH (174).—Mouth of R. Colne, *Henricia*; COLE (43).—Plymouth, list with locc. of *Hol. Ech. Ast. Oph. Crin.*; MAR. BIOL. ASS. (184): *Cucumaria*; PACE (205).

French Coast,—La Hougue, variations in benthos, *Hol.*, *Ech.*, *Oph.*; MALARD (179) p. 192, 195.—B. of Biscay, *Ech.*, *Ast.*; ALBERT (4). Portugal, Echinoderm fauna,—N.; (198): Š.; (199): NOBRE.

Mediterranean—near Capri,—plankton, larval *Synapta*, on mud *Ankyroderma*, *Echinocardium*; LO BIANCO (154).

Black Sea, *Amphiura*, *Synapta*, *Cucumaria*; SOVINSKIĖ (261).

America,—Woods Hole, shallow-water Echinoderm fauna, *Asterias*, *Cribrella*, *Solaster*, *Ophiura*, *Ophioglypha*, *Ophiopholis*, *Amphipholis*, *Gorgonocephalus*, *Arbacia*, *Strongylocentrotus*, *Echinarachnius*, *Melita*, *Cucumaria*, *Thyone*, *Caudina*, *Trochostoma*, *Synapta*; CLARK (38).—Bathymetric and geographic range of W. Indian *Ech.* fauna; AGASSIZ (3) p. 218.—Jamaica, *Ech. Oph. Ast. Hol.*; ANDREWS (11) p. 76.—Argentine Patagonia, E. coast, *Hemister*, *Arbacia*, *Echinus*, *Encope*, *Cycethra*, *Asterina*, *Echinaster*, *Lahillea*, *Gastraster*, *Asterias*, *Ophiactis*, *Ophioceramis*; LORIOL (162).

iii. Indian Ocean and adjacent Seas :—S. Africa, S. & E. coasts, various locc., *Ech.*, esp. *Astropyga*, *Phormosoma*, *Echinus* n. sp., *Palaeolampas*, *Urechinus*; BELL (22A).—G. of Suez, *Ech.* fauna, *Rhabdocidaris*, *Diadema*, *Heterocentrotus*, *Echinometra*, *Echinus*, *Clypeaster*, *Tetradiscus*, *Echinolampas*, *Lovenia*, *Metalia*, *Schizaster*, *Möira*; FOURTAU (83).—Oman, *Eobrissus*; BELL (22).—Ceylon, *Cidaris*, *Stephanocidaris*, *Phyllacanthus*, *Diadema*, *Echinothrix*, *Stomopneustes*, *Pseudoboletia*, *Echinostrephus*, *Temnopleurus*, *Salmacis*, *Toxopneustes*, *Fibularia*, *Clypeaster*, *Echinanthus*, *Laganum*, *Echinodiscus*, *Echinoneus*, *Echinolampas*, *Maretia*, *Lovenia*, *Schizaster*, *Astropecten*, *Luidia*, *Stellaster*, *Anthenea*, *Goniodiscus*, *Pentaceros*, *Culcita*, *Asterina*, *Ophidiaster*, *Linckia*, *Nardoa*, *Metrodora*, *Retaster*, *Echinaster*, *Pectinura*, *Ophiura*, *Amphiura*, *Ophionereis*, *Ophiocnemis*, *Ophiocoma*, *Ophiarachna*, *Ophiothrix*, *Ophiomaza*, *Ophiopteron*, *Ophiomyxa*; HERDMAN (120): *Antedon*, incl. 1 n. sp., and *Actinometra*, coll. Herdman; CHADWICK (35).—B. of Bengal, *Phormosoma* n. sp.; MORTENSEN (194).—G. of Siam, *Stephanocidaris*, *Diadema*, *Astropyga*, *Chaetodiadema*, *Echinothrix*, *Salmacis*, *Pleurechinus*, *Gymnechinus*, *Toxopneustes*, *Parasalenia*; MORTENSEN (195).

Malay Archipelago,—zoogeographic remarks (p. 218), complete list of *Ech.* (p. 201–214) with special notes or descriptions of spp. of *Cidaris*, *Phormosoma*, *Asthenosoma*, *Calveria*, *Araeosoma*, *Hapalosoma*, *Hygrosoma*, *Tromikosoma*, *Sperosoma*, *Salenia*, *Aspidodiadema*, *Dermatodiadema*, *Diadema*, *Echinothrix*, *Chaetodiadema*, *Astropyga*, *Micropyga*, *Hemipedinia*, *Coelopleurus*, *Podocidaris*, *Prionechinus*,

Trigonocidaris, *Genocidaris*, *Pleurechinus*, *Temnopleurus*, *Salmacis*, *Mespilia*, *Stomopneustes*, *Psammechinus*, *Gymnechinus*, *Toxopneustes*, *Triopneustes*, *Pseudoboletia*, *Parasalenia*, *Selenechinus* n. g., *Echinometra*, *Heterocentrotus*, *Echinocyamus*, *Fibularia*, *Laganum*, *Alexandria*, *Clypeaster*, *Echinodiscus*, *Echinoneus*, *Echinobrissus*, *Aphanopora*, *Echinolampas*, *Neolampas*, *Stereopneustes*, *Stegaster*, *Sternopatagus*, *Pourtalesia*, *Palaeostoma*, *Palaeopneustes*, *Plesiozonus*, *Linopneustes*, *Hemiasiter*, *Faorina*, *Moiria*, *Schizaster*, *Brissus*, *Metalia*, *Brissopsis*, *Maretia*, *Breynia*, *Lovenia*, *Aerope*, *Aceste*, *Homolampas*, *Phrissocystis*, and *Palaeotropus* (vide IV, c); DE MEIJERE (57) passim, list of n. spp. p. 238.—Deep-sea *Oph.* of 'Siboga,' *Pectinura*, *Ophiopora*, *Ophiopyren*, *Ophiocoris*, *Ophiopallas*, *Ophiocirce*, *Ophiotrochus*, *Ophioceramis*, *Ophiomoeris*, *Ophiocrates*, *Ophiurus*, *Ophiolytus*, *Ophiopora*, *Ophiomidas*, *Ophiomastus*, *Ophiopyrgus*, *Ophiolucce*, *Ophiocorys*, *Ophioglypha*, *Ophiomusium*, *Ophioplax*, *Ophiocliton*, *Ophiodoris*, *Amphiura*, *Ophiactis*, *Ophiolithia*, *Ophiomyces*, *Ophiacantha*, *Ophioplinthaca*, *Ophiomitrella*, *Ophiocamax*, *Ophiostomus*, *Ophiomytis*, *Ophiotoma*, *Ophioscolex*, *Ophiostrix*, *Ophiobryella*, *Ophiodera*, *Astrotoma*, *Astrogomphus*, *Astrocera*, *Astrocharis*, *Astrochema*, *Ophiocreas*, *Astronyx*; KOEHLER (143).—Amboina, Echinoderms described by Rumpf; MARTENS (185) p. 131: list of new Echinoderms collected by Semon; SEMON (252): *Oph.* descr. by Brock and other *Oph.* mostly this region revised, vide *Ophiopaepale*, *Ophiostyreus*, *Ophioglypha*, *Ophiactis*, *Amphiura*, *Ophiocnida*, *Ophionereis*, *Ophiomastix*, *Ophiocoma*, *Ophiarachna*, *Ophiostrix*, *Litkenia*, *Ophiocathia*, *Ophiosphaera*, *Ophiolophus*; KOEHLER (144).

iv. **Pacific Ocean and adjacent Seas:**—Various locc., n. spp. of *Chaetodiadema*, *Opechinus*, *Pleurechinus*, *Microcyphus*, *Gymnechinus*; MORTENSEN (195).

Japan, *Araeosoma* n. sp., *Asthenosoma*, *Calveria*; MORTENSEN (194).

Panama, deep sea *Ech.* specially discussed, also others and some from other regions, see especially *Abatus*, *Acrosalenia*, *Aerope*, *Agassizia*, *Amphipneustes*, *Araeosoma*, *Arbacia*, *Archaeopneustes*, *Argopatagus*, *Aspidodiadema*, *Asthenosoma*, *Atelospatangus*, *Bothriocidaris*, *Brissopsis*, *Calveria*, *Calymne*, *Cassidulus*, *Centrocidaris*, *Cidaris*, *Conolampas*, *Cystechinus*, *Dermatodiadema*, *Dialithocidaris*, *Dorocidaris*, *Echinocrepis*, *Echinolampas*, *Gauthieria*, *Genicopatagus*, *Goniocidaris*, *Histocidaris*, *Homolampas*, *Hoplosoma*, *Hygrosoma*, *Kamptosoma*, *Lambertia*, *Lepidechinus*, *Linopneustes*, *Lysechinus*, *Melonites*, *Moiria*, *Nacospatangus*, *Neolampas*, *Oligoporus*, *Palaeobrissus*, *Palaeotropus*, *Paleopneustes*, *Parabrissus*, *Periaster*, *Petalocidaris*, *Phormosoma*, *Phrissocystis*, *Pilematechinus* n. g., *Plesiodiadema*, *Plesiozonus*, *Plexechinus*, *Porocidaris*, *Pourtalesia*, *Rhynchopyrgus*, *Salenia*, *Schizaster*, *Spatagocystis*, *Spatagodesma*, *Sperosoma*, *Sternopatagus*, *Temnechinus*, *Tetracidaris*, *Toxobrissus*, *Urechinus*; Bathymetric and geographic range of Panamic *Ech.* fauna (p. 218); AGASSIZ (3).

Australia,—Victoria, *Goniocidaris*, *Strongylocentrotus*, *Microcyphus*, *Amblypneustes*, *Holopneustes*, *Echinocyamus*, *Eupatagus*, *Echinocardium*, *Linthia*; HALL (111).

New Zealand, list of *Echinoderma*; HUTTON (129).—*Cucumaria*; PERRIER (213).

v. **Arctic Ocean and adjacent Seas:**—*Ast.* fauna, esp. *Asterias*, *Bathybiaster*, *Ilyaster*, *Rhegaster*, *Poraniomorpha*, *Lasiaster*, *Solaster*, *Stichaster*; ÖSTERGREN (202).—Between Nova Zembla and Franz-Josef's Ld. *Elpidia*, *Cucumaria*, *Phyllophorus*, *Psolus*, *Eupyrus*, *Trochostoma*, *Myriotrochus*, *Strongylocentrotus*, *Schizaster*, *Pourtalesia*, *Asterias*, *Cribrella*, *Hymenaster*, *Pteraster*, *Lophaster*, *Solaster*, *Crossaster*, *Rhegaster*, *Leptoptychaster*, *Ctenodiscus*, *Pontaster*, *Pluto-*

naster, *Ophiopleura*, *Ophiura*, *Ophioglypha*, *Ophiocten*, *Amphiura*, *Ophiopholis*, *Ophiacantha*, *Ophioscolex*, *Gorgonocephalus*, *Antedon*; MICHAÏLOVSKIJ (192).—Spitzbergen, Echinoderms chiefly on W. coast; ROEMER (229): *Trochoderma elegans*, *Ophioglypha nodosa*, and remarks on records of other echinoderms; MICHAÏLOVSKIJ (191).

- vi. **Antarctic Ocean and adjacent Seas**:—Complete list of litoral *Ast.* from American subregion of South Sea, esp. *Diplasterias*, *Asterias*, *Cribrella*, *Cycethra*, and comparison with their distrib. in Australian and African subregions, and with corresponding spp. in N. hemisphere; MEISSNER (186).—C. Horn and neighbourhood, *Synallactes*, *Holothuria*, *Cucumaria*, *Thyone*, *Psolidium*, *Psolus*, *Caudina*, *Trochodota*, *Chiridota*; PERRIER (212).—Magellan Str., *Chiridota* n. sp.; PERRIER (214).

B. GEOLOGICAL.

(i) GENERAL.

Evidence of *Echinoderma* for connection of Antilles with Mediterranean in Oligocene time contradicted by *Mollusca*, possible explanation; REID (225).—Strata of Pyrenees, Cambrian to Pleistocene, with lists of Echinoderms; ROUSSEL (234).—Brief systematic account of genera of *Cidaridae* and *Salenidae* with special reference to French fossils (86), ditto, *Diadematidae* (87); FRITEL.

(ii) CAINOZOIC.

- a. **General**:—Spp. of *Schizaster*, horizon correlated with mutations of apex; TORNUST (268).—Tertiary *Ech.* & *Crin.* Victoria, S. Australia, and Tasmania, list with locc.; DENNANT (58).
- b. **Pleistocene**:—Denmark, —Stone-age, *Psammechinus*; PETERSEN (215) p. 81: Yoldia clay, Esbjerg, *Psolus*, *Ophioglypha*; MADSEN (177) p. 530.—Cave-breccia, Gibraltar, *Strongylocentrotus*; ACLAND (2).—Nettuno, Italy, *Ech.*; MELI (187) p. xli.—Ischia, —Astian, Mt. Epomeo, *Fibularia*, *Brissopsis*, *Schizaster*, *Amphidetus* (p. 5), Saharian, volcanic agglomerate, Valle di Mezzavia, *Fibularia* (p. 8); BELLINI (23).—Raised beaches, G. of Suez, *Rhabdocidaris*, *Heterocentrotus*, *Echinometra*, *Echinus*, *Clypeaster*, *Tetrodiscus*, *Metalia*, *Fibularia*, *Brissus*; FOURTAU (83) p. 444.—Bore-hole in coral reef, Funafuti, *Cidaris*, *Ech.* radioles, and *Hol.* plates; HINDE (124) p. 329.
- c. **Pleiocene**:—*Ech.* in tuff near Nettuno; DE VESCOVI (61) p. 67: not this rock; MELI in Abstr.—Near Borgamano, *Encrinurus* [*Cidaris*, *Echinus*, *Echinocyamus*, *Schizaster*; PATRINI (208) p. 743.—Upper:—Suez Canal, *Temnopleurus*, *Laganum*; FOURTAU (83) p. 444. Purisima formation, California, *Astrodapsis*, *Scutella*; HAEHL (110) p. 24.—New Zealand, *Echinus*; LORIOLO (162) p. 20.
- d. **Meiocene**:—Tagliacozzo, Italy, *Cidaris*; LUPI (168).—Upper:—Redonian, Rennes, *Echinocyamus*; DOLLFUS (65) p. 662.—(Or Middle), Pontilevian, —Haguineau (Maine-et-Loire) *Toropneustes*, *Echinus*, *Psammechinus*, *Cidaris*, *Echinolampas*, *Echinocyamus*; COUFFON (46): near Saumur, list of *Ech.*; COUFFON (47) p. 218.—Middle, —Helvetian, —‘calcaire à moellons de l’Hérault,’ *Scutella*; LORIOLO (162) p. 68: Suabia, Echinoderm fauna compared with other locc., *Sphaeraster*, *Astropecten*, *Antedon*, *Cidaris*, *Psammechinus*, *Stirechinus*, *Scutella*, *Amphiope*, *Fibularia*, *Hemiaster*, *Spatangus*, *Sphaerites*, *Echinolampas*, *Brissopsis* [sic], *Schizaster*, *Echinocardium*; SCHUETZE (251).—Lower, —Algeria, *Schizaster*; SAVORNIN (241) p. 146.—15 km. E. of

Dêr el Beda, near Suez, *Scutella*, *Brissopsis*; BARRON (15) p. 607.—Burdigalian, near Chambéry, France, *Echinolampas*, *Spatangus*, *Psammechinus*; DOUXAMI (69).

Maryland, *Echinocardium*, *Scutella*, *Ophioderma* (?), horizons and locc.; CLARK (39).

e. **Oligocene** :—Vacant.

f. **Eocene** :—Pyrenees, *Maretia*, *Macropneustes*, *Linthia*, *Schizaster*, *Trachyaster*, *Ditremaster*, *Holcopneustes*, *Prenaster*, *Cyclaster*, *Amblypygus*, *Oriolampas*, *Pygorhynchus*, *Echinolampas*, *Conoclypeus*, *Cidaris*, *Rhabdocidaris*, *Leiosoma*, *Micropsis*, *Epiaster*, *Euspatangus*, *Hemiaster*, *Coelopleurus*; GOURDON (102).—Bribir, Dalmatia, *Porocidaris*, *Micropsis*, *Leiopedina*, *Schizaster*, *Macropneustes*, *Trachypatagus*, *Euspatangus*; DAINELLI (49).—Upper,—near Termini-Imerese, Italy, *Cidaris*, *Porocidaris*; CHECCHIA (37).—Bartonian, Biarritz and Gaas, *Pentacr.* *didactylus*, *Porocidaris*; DOUVILLÉ (67).—Middle,—Ostrovica-bara in Dalmatia, *Porocidaris*, *Micropsis*, *Leiopedina*, *Schizaster*, *Macropneustes*, *Trachypatagus*, *Euspatangus*; DAINELLI (50).—(? Mid.) Garadimi and Tamaské in Sokoto, *Plesiolampas* & *Hemiaster* n. spp., inferences on p. 303; BATHER (18): *Plesiolampas* suggests Lower rather than Middle (p. 283) but on p. 253 “scheint der Schluss auf Mitteleozän allerdings durchaus berechtigt”; OPPENHEIM (201).—Nummulitic of Gschliefgraben and Traunsee, Austria, *Ech.*; FUGGER (92) p. 339, 345.—Paleocene Denmark, *Ananchytes*, *Bourguetier.*, *Goniaster*, derived from Danian; GRÖNWALL (109) p. 28–31, figg.: same with addition of *Ophiura*; GRÖNWALL (108) p. 428.

Near Adelaide, S. Austral., *Schizaster*, *Macropneustes*; BASEDOW (16).

(iii) MESOZOIC.

a. **General** :—Vacant.

b. **Cretaceous** :—Yorkshire, lists of Echinoderms; STRANGWAYS (266).—Portugal, list of horizons with *Ech.*; MALLADA (181).

1. Upper:—*Hemiaster* various spp. discussed; LAMBERT (147).—Upper Chalk of England, Echinoderm fauna, special notes on spp. of *Micraster*, *Pseudodiadema*, *Cidaris*, *Holaster*; JUKES-BROWNE (137) p. 20, 455, 497 et passim.—*Echinothuria* and other Chalk *Ech.* as drift in Aller Vale gravel pit near Torquay, and in flints at Great Haldon, Devonshire; SALTER (240) p. 19 & figg.—*Podolia*, *Holaster*, *Cidaris*; RADKEVICH (222).—Stage IX, Isengebirge, *Phymosoma*, *Catopygus*, *Nucleolites*, *Caratomus* (p. 18), *Cardiaster* (p. 44), general list (p. 149); ZAHÁLKA (296).—Egypt,—principal locc. and fossils there found, names of *Ech.*; FOURTAU (82): *Nardoa*, *Anthenea*; LORIOL (162).—Madagascar, *Noetlingia*; BOULE (30).—N. S. Wales, *Isocr.*; ETHERIDGE (74).

Danian,—Craniakalk, harbour of Copenhagen, *Bourguetier.*, *Pentacr.*, *Ophiura*, *Goniaster*; GRÖNWALL (108) p. 424.—*Cyathidium* evidence for a gulf-stream; HENNIG (115) p. 55.

Danian and Senonian, Scania, *Ech.* & *Crin.*; TÖRNEBOHM (267) p. 136, 143.—Denmark, common *Ech.*; USSING (275) p. 85.

Senonian,—Yorkshire, zones of *Micraster cortestudinarium* to *Actinocamax quadratus*, *Bourguetier.*, *Marsupites*, *Uintacr.*, *Ophiura*, *Cidaris*, *Salenia*, *Zeuglopleurus*, *Echinocorys*, *Micraster*, *Infulaster*, *Holaster*, *Cardiaster*; ROWE (235).—Near Ste-Mènehould, *Micraster*, *Epiaster*, *Cidaris*; COLLET (44) p. 80.—Pyrenees, *Micraster*, *Coraster*, *Echinocorys*, *Echinoconus*; GOURDON (102): *Micraster*, *Hemiaster*, *Pyrina*, *Clypeolampas*, *Salenia*, *Orthopsis*, *Cyphosoma*; ROUSSEL (232): *Pyrina*, *Hemiaster*, *Salenia*, *Clypeolampas*, *Orthopsis*, *Micraster*

- Cyphosoma*; ROUSSEL (233).—Near Poltawa, Russia, *Ananchytes*, *Cidaris*, *Holaster*; ARMASCHESKY (14) p. 84, 273.—N. Caucasus, *Ananchytes*; KARAKASH (138).—Nierenthaler Schichten of Gschliefgraben, Austria, *Ech.*; FUGGER (92) p. 339.
- Upper Senonian,—Aral Sea, *Cardiaster*, *Cyphosoma*, *Ananchytes*, *Cassidulus*; BERG (24).—Algeria, *Heterolampas*; SAVORNIN (241) p. 150.—Quadraten-Kreide, Lägerndorf, Holstein, *Isocr.* n. sp.; JAEKEL (133).—*Marsupites* zone near Croydon, England,—*Bourquetier*, *Uintacr.*, *Echinocorys*; DIBLEY (62): *Marsupites*, *Uintacr.*, *Echinoconus*; WRIGHT (294): *Cidaris*, *Cyphosoma*, *Echinocorys*, *Galerites*, *Micraster*, *Bourquetier*, *Marsupites*, *Uintacr.*; HINDE (125).—Nanaimo group (? = Niobrara), Vancouver Id. and Salt Spring Id., *Uintacr.* & *Hemiaster* n. sp.; WHITEAVES (285).
- Lower Senonian,—Querum bei Braunschweig, *Stereocidaris*; WOLLEMAN (289).—Saxony, *Cardiaster*, *Catopygus*; PETRASCHECK (216).—Silesia, *Cardiaster*; FLEGEL (79).—Priesener-Schichten, E. Bohemia, new locc., *Cidaris*, *Micraster*, *Holaster*, *Hemiaster*; JAHN (134).
- Senonian to Turonian,—near Croydon, Eng., *Ech.*, *Ast.*, *Crin.*; HOLMES (127).—Zones of *Holaster planus* and *Micraster cortestudinarium* in N. Lincolnshire, *Micraster*, *Infulaster*, *Holaster*, *Ananchytes*, *Cidaris*; BURNET (33).—Mungo Limest., Cameroons, *Cidaris*, *Hemiaster*?, and a *Galeritid* (p. 223), sandy shale of same age, indeterminate *Spatangids* (p. 234); SOLGER (258).—(Turonian?) Phosphatic Chalk, between Somme and Oise, *Ananchytes*; RABELLE (221).
- Turonian,—Yorkshire, zones of *T. gracilis* and *Holaster planus*, *Bourquetier*, *Pentacr.*, *Cidaris*, *Cyphosoma*, *Salenia*, *Echinocorys*, *Hemiaster*, *Holaster*; ROWE (235).—Near Ste-Ménéhould, *Discoidea*, *Glyphosoma*, *Cyphosoma*, *Cidaris*, *Peltastes*, *Goniaster*, *Bourquetier*, *Apiocr.*, *Pentacr.*; COLLET (44) p. 77.
- Upper Turonian,—Dresden, *Holaster*, *Phymosoma*; PETRASCHECK (216).—Silesia, *Micraster*; FLEGEL (79).
- Turonian or Cenomanian, S. Patagonia, *Cardiaster*; WILCKENS (287).
- Cenomanian,—vallée de l'Oison, *Peltastes*; FORTIN (81).—St. Jouin, Normandy, list of *Ech.*; NIBELLE (197).—Near Brunswick, *Holaster*, *Pseudodiadema*, *Discoidea*; WOLLEMAN (290).—Bohemia, *Cidaris*, *Pentacr.*; JAHN (135).
- Upper Cenomanian,—near Ste-Ménéhould, *Holaster*, *Cidaris*; COLLET (44) p. 70.—Sinai, *Linthia*; NEWTON (196).
- Lower Cenomanian,—"Gaize," Ste-Ménéhould, *Hemiaster*, *Epiaster*, *Holaster*, COLLET (44) p. 44.
- Albian,—Algeria, *Epiaster*; SAVORNIN (241) p. 141.—N. Caucasus, *Pseudodiadema*; KARAKASH (138).
- 1 & 2. Cenomanian and Aptian, Switzerland, *Hemiaster*, *Heteraster*; SCHARDT (244).
2. Lower :—W. Swiss Jura, horizons and locc., lists of *Ech.*; BAUMBERGER (19).—Nauplia, Greece, remains of *Ech.*; CAYEUX (34) p. 96, 97.—Madagascar, *Epiaster*, *Peltastes*; DOUVILLÉ (68) p. 214.
- Aptian,—Upper Gault, Barnwell near Cambridge, *Cidaris*, *Pentacr.*; FEARNSIDES (76).
- Neocomian,—Isère, *Pentacr.* n. spp.; LORIOI (162).—Greensand, Whitehead near Belfast, *Ech.*; WELCH (282).—Barremian, Bulgaria, *Peltastes*, *Echinobrissus*, *Cidaris*, *Pseudocidaris*, *Psammechinus*; ZLATARSKĪ (299).—Jorat, Bernese Jura, Hauterivian *Goniaster*, *Toxaster*, *Holaster* (p. 15), Berriasian *Toxaster*, *Phyllobrissus*; BAUMBERGER (20) p. 14.

Comanche series, Washita group, Texas, *Diplopodia*, *Pyrina*, *Holcetypus*, *Epiaster*; RICHARDSON (227) p. 48.—Shafter beds, Shafter, Texas, *Toxaster*, *Diadema*, *Holcetypus*; UDDEN (273) p. 35, 37.—Honduras, *Enallaster*, *Epiaster*, *Diplopodia*, *Pseudosalenia*, *Cidaris*; LORIEL (162).

c. **Jurassic**:—Yorkshire, lists of Echinoderms; STRANGWAYS (266).

1. Upper:—Madagascar, *Apiocr.*; DOUVILLÉ (68) p. 213.

Portlandian (= Tithonian),—Aquitaine, *Hemicidaris*, *Echinobrissus*, *Acrosalenia*; GLANGEAUD (101) p. 57.—Solagna in Vicentine, *Metaporhinus*, *Collyrites*, *Hemicidaris*, *Phyllocr.*; DEL CAMPANA (55).

Kimmeridgian, —near Macon, *Pseudodiadema*, *Pygurus*, *Collyrites*; LISSAJOUS (153).—Nattheim-Wettinger beds, remains of near Basle, *Cidaris*, *Pentacr.*, *Apiocr.*, *Hemicidaris*; ROLLIER (230).—Solenhofen Plattenkalk, list of *Ech.*, *Ast.*, *Oph.*, *Crin.*, *Saccocoma* n. sp.; WALTHER (291).

Sequanian, —Upper, —Astartian near Macon, *Pseudodiadema*, *Glypticus*, *Stomechinus*; LISSAJOUS (153).

1 & 2. Kimmeridgian and Oxfordian, Poland, *Apiocrinus*, *Pentacrinus*, *Sphaeraster*, *Cidaris*, *Rhabdocidaris*, *Stomechinus*, *Hyboclypeus*, *Echinobrissus*, *Collyrites*, *Dysaster*; SIEMIRADZKI (255).

2. Middle:—Rauracian, Upware, Cambridgesh. *Desorella*; WOODS (293).—Lower Rauracian, Le Preslot, Hte-Saone, *Cidaris*, *Diplocidaris*, *Hemicidaris*, *Diplopodia*, *Pedina*, *Apiocr.*, *Millericr.*, *Eugeniocr.*, *Pentacr.*; MAIRE (178).—Oxfordian, Deux-Sèvres, *Dysaster*, *Stomechinus*, *Cidaris*; WELSCH (283).—Near Macon, —Rauracian, *Cidaris*, *Pseudodiadema*, *Diplopodia*, *Holcetypus*, *Collyrites*, *Dysaster*; Oxfordian, *Pseudodiadema*, *Diplopodia*, *Magnosia*, *Holcetypus*, *Echinobrissus*, *Collyrites*, *Dysaster*; Callovian, *Pseudodiadema*, *Diplopodia*, *Cidaropsis*, *Pedina*, *Holcetypus*, *Hyboclypeus*, *Echinobrissus*, *Pygurus*, *Collyrites*, *Dysaster*; LISSAJOUS (153).—Zone of *Parkinsonia parkinsoni* near Neuchatel, *Clypeus*, *Collyrites*; SCHARDT (243) p. 257.

3. Lower:—Bathonian, Neuchatel, Vaud, and Ain, *Clypeus*, *Holcetypus*, *Collyrites*, *Acrosalenia*, *Pseudodiadema*; CLERC (42).—Bathonian and Vesulian near Neuchatel, *Pentacrinitid* limestone 30 m. and 15 m.; SCHARDT (243) p. 304.—Hauptrogenstein, Liestal near Basle, *Isocr.*, *Ophiomus*; LEUTHARDT (152).—Lower Bathonian?, Greenland, *Pentacr.* [i.e. *Isocr.*]; MADSEN (176).—Near Macon, —Bathonian, *Pseudodiadema*, *Hemipedina*, *Pedina*, *Echinobrissus*, *Pygurus*, *Collyrites*; Bajocian, *Pseudodiadema*, *Hemipedina*, *Magnosia*, *Pedina*, *Pseudopedina*, *Stomechinus*, *Holcetypus*, *Hyboclypeus*, *Galeropygus*, *Pyrina*, *Echinobrissus*, *Clypeus*, *Collyrites*; LISSAJOUS (153).—“Zone à *Lioceras concavum* du Mont d’Or Lyonnais,” *Cidaris*, *Pentacr.*; RICHE (228).—Bajocian, Madagascar, *Stomechinus*; DOUVILLÉ (68) p. 215.

d. **Lias**:—near Estagel, France, *Crin.*; MENGEL (188) p. 266.

Middle, or Pliensbachian (= Charmouthian):—Seeberg, Gotha, *Cidaris*, *Pentacr.*, *Cotylederma*; SCHAEFER (242).—Bulgaria, *Pentacr.*; ZLATARSKĪ (299).—Zone of *Amm. costatus*, Freistadt in Moravia, *Pseudodiadema*, *Balanocr.*, *Pentacr.*; RZEHAČ (238) p. 148: *Balanocr.* (239).—Domerian, W. Lombardy, *Millericr.*, *Pentacr.*, *Cidaris*; MARIANI (183) p. 153, 154.

Lower, or Sinemurian:—Seeberg, Gotha, *Asterias*, *Pentacr.*; SCHAEFER (242).—Mt. Campo dei Fiori, Lombardy, *Pentacr.*; MARIANI (183) p. 138.

Rhaetic:—Redland, Bristol, *Cidaris*, *Pentacr.*; SHORT (254).—Hettangian, —of Vendée, n. spp. of *Acrosalenia*, *Pseudodiadema*, *Hessotiana*, *Palaeopedina*, in coll. Chartron; LAMBERT (148): near Macon, *Diademopsis*; LISSAJOUS (153).

- e. **Trias**:—Bulgaria, *Encrinus*; ZLATARSKĪ (299).
 Upper,—Bear Id., Arctic, *Pentacr.*, *Ophioderma*, *Cidaris*; BOEHM (28).—Of Kostica, Montenegro, *Encrinus*; DEL CAMPANA (56).—Arlbergsschichten near Bludenz, *Encrinus*; FIEDLER (77).
 Middle,—Supposed Lias of Theben-Neudorf, Austria, *Encrinus*; TOULA (269).—Upper Muschelkalk, Seeberg, Gotha, *Cidaris*, *Encrinus*; LANGENHAN (150).—Ditto and Ladinian near Sarajevo, *Encr.*, *Cidaris* (p. 576, 579, 645, 703), Lower, *Dadocr.* (p. 539); KITTL (141).

(iv) PALAEOZOIC.

- a. **General**:—Lower Palaeozoic *Crin.* Australia, historical summary; ETHERIDGE (75).
 b. **Permian**:—Cibolo limest., Shafter, Texas, *Archaeocidaris*, & *Crin.* UDDEN (273) p. 20–22, large *Crin.* columnals fig. 4.
 c. **Permo-Carboniferous**:—Irwin R., W. Australia, columnals of (?) *Actinocrinidae*; CHAPMAN (36) p. 323.
 d. **Upper Carboniferous**:—Sumatra, *Poteriocr.* and *Crin.* indett.; VOLZ (280) p. 108.—Lower Coal Measures, Kansas, various horizons and locc., *Archaeocidaris* (p. 464, 467, 470, 472), *Erisocr.* (p. 467); BEEDE & ROGERS (21).
 e. **Lower Carboniferous**:—Dumfries, *Palaechinus*, *Archaeocidaris*, *Poteriocr.*, *Hydreionocr.*, *Forbesocr.*; PEACH (209).—Near Sarajevo, *Poteriocr.*? at Prača (p. 666, 681), *Bellerophon* beds, *Archaeocidaris*, *Eocidaris*? (p. 684); KITTL (141).—Yoredale beds, Yorkshire, *Archaeocidaris* (p. 186, 188), Carbonif. Limest., Newbrough, *Archaeocidaris*, *Poteriocr.* (p. 192); HIND (123).—Visean, Culm, near Giessen, *Archaeocidaris* n. sp.; PARKINSON (206).—Lower Visean, Vla Belgium, —Denée (Namur) *Scaphiocr.*, *Taeniaster*, *Palaechinus*, *Rhoechinus*, *Oligoporus*, *Archaeocidaris*; FRAIPONT (85): Pair (Clavier), *Platyocr.*; DESTINEZ (59) p. M 145.
 St Louis Limest., Iowa, *Pentremites*, *Archaeocidaris*; UDDEN (272) p. 380, 390.—Indiana, —Warsaw Limest., *Batochr.* n. spp. (103), *Batochr.*, *Tricoelocr.*, *Pentremites* (105), Keokuk Limest., *Actinochr.* n. var. (105): ROWLEY in GREENE.—Hueco formation, Texas, *Archaeocidaris*; RICHARDSON (227) p. 37.
 f. **Devonian**:—Upper,—Psammites du Condroz, Belgium, list of Echinoderms with locc.; DESTINEZ (60).—? Lower,—Epphaven, Cornwall, *Ophiurina*?; BATHER in FOX (84) p. 752.—Lower,—Siegener Schichten, Westerwald, *Crin.* cf. *Poteriocr. patulus*; DREVERMANN (71) p. 281.
 N. Amer. esp. Michigan, n. spp. of *Tripleurochr.* n. g., *Megistocr.*, *Tylochr.* n. g., & *Dolatochr.*, also spp. of *Stereocr.*, *Gennaeocr.*, *Gilbertocr.*, *Vasocr.*, *Taxocr.*, *Arthracantha*; WOOD (291).—Thunder Bay series, Michigan, *Dolatochr.*, *Megistocr.*, *Codaster*, *Pentremites*, *Nucleocr.*; GRABAU (102 A) p. 193–196.—Ontario Co., N. Y., lists of *Crin.* and *Blast.* from all horizons; CLARKE & LUTHER (40).—Upper,—Tully Limest. W. New York, *Pentremites*; LOOMIS (161) p. 907. Hamilton Group, Indiana, *Megistocr.*, *Stereocr.*, *Gennaeocr.* n. sp. & *Botryocr.* n. sp., first occurrence of last genus in America [but see BATHER *Crin.* Gotland, p. 103] (104), ditto Clark co., *Nucleocr.* (105); Upper Helderberg, Falls of Ohio, *Arachnochr.*, *Megistocr.* (104), ditto, *Dolatochr.* (105): ROWLEY in GREENE.—Lower Devonian, U. S. A., *Anomalocystis*, *Lepadocr.*, *Camerochr.*; SCHUCHERT (249).
 g. **Silurian**:—source of R. d'Os, Pyrenees, *Scyphocr.*; ROUSSEL (233) p. 16.

Upper,—Ekwan R., N. E. Canada, *Crin.* columnals; DOWLING (70) p. 17, 39.—Upper,—N. Amer., *Apiocystis*, *Lepadocr.*, *Hallicystis*, *Tetracystis* n. g., *Jaekelocystis*, *Pseudocr.*, *Trimerocystis* n. g., *Callocystis*, *Coelocystis*, *Sphaerocystis*, *Camerocr.*; SCHUCHERT (249).—Missouri,—Lower Helderberg, Delthyris Limest., *Stribalocystis*? *Troostocr.*?, and *Melocr.* n. sp.: Clinton group, n. spp. of *Calceocr.*, *Glyptocr.*, *Gissocr.*? and *Lampterocr.*?: Niagaran, *Pisocr.*, *Cyathocr.*?, *Lecanocr.*, *Cordylocr.*?, all n. spp., and *Stribalocystis*; ROWLEY (236).—Osgood and Laurel Limestones, various locc. Indiana, *Crin.*, *Cyst.*; FOERSTE (80) p. 341, 342.

Yass, N. S. W., *Pisocr.* n. sp.; ETHERIDGE (75).

h. Ordovician:—Upper,—Chasmops Lst., Kinnekulle, *Echinosphaera* (p. 56).—Middle,—Orthoceras Lst., *ibid.*, *Sphaeronis* (p. 47); HOLM (126).—D₂ near Prag, *Lobolithus*? FRIČ (88).

Trenton Limestone, Ottawa, *Stenaster*, *Agelacr.*, *Glyptocr.*, *Rhodocr.*, *Archaeocr.*, *Periglyptocr.*, *Dendrocr.*, *Cleiochr.*, *Heterocr.*, *Lichenocr.*, *Iocr.* (pp. 61–69), Black River Formation, *ibid.*, *Glyptocr.* (p. 71); AMI (7).—Chazy Formation, Ottawa River, *Malocystis*, *Glyptocystis*, *Palaeocystis*, *Bolboporites*; AMI (8) p. 140.

IV. SYSTEMATIC†.

(A.)—ECHINODERMA IN GENERAL.

Echinoderma thus classified: Sub-phylum *Eleutherozoa*, with Classes 1. *Asteridia*, 2. *Ophiuridia*, 3. *Echinidia*, 4. *Holothuridia*; Sub-phylum *Pelmatozoa*, with Classes 1. *Crinoidia*, 2. *Blastoidia*, 3. *Cystoidia*; DELAGE (54).—Recent Echinoderms divided into “1. Holothurien (*a*) Aspidochiroten (*b*) Dentrochiroten; 2. Crinoiden; 3. Echiniden; 4. Anthodiaten (*a*) Asteriden (*b*) Ophiuren”; HALLER (111A).

(B.)—HOLOTHURIOIDEA.

Holothuridia divided into Orders 1. *Actinopodida* with Suborders *Dentrochiro-*, *Aspidochiro-*, and *Molpadidae*, 2. *Paractinopodida*; DELAGE (54).

Acanthotrochus; DELAGE (54) p. 338, fig.

Achlyonice; DELAGE (54) p. 329.

Actinocucumis; DELAGE (54) p. 320, fig.

Actinopodida defined; DELAGE (54) p. 318.

Allantis; DELAGE (54) p. 324, fig.

Amphigynas; DELAGE (54) p. 327.

Ananus; DELAGE (54) p. 323.

Anapta; DELAGE (54) p. 337.

Ankyroderma; DELAGE (54) p. 332, figg. *A. musculus*; LO BIANCO (154) p. 61, pl. xl.

† A dagger prefixed to the name of a species indicates that it is fossil; prefixed to the name of the author, it denotes that the reference is to the species in a fossil state; prefixed to the name of a genus, it indicates that all species in the same paragraph are fossil, and the † is therefore not repeated before each name. The abbreviations *l. c.* and *op. cit.* refer only to the place or work quoted immediately before. *Ibid.* refers only to locality or, in the case of fossils, to horizon and locality.

A name and reference quoted without further statement [e.g. *Ankyroderma musculus*; LO BIANCO (154) p. 61] indicate that the quoted author's statement refers to a question of no systematic importance. Further information can usually be gleaned from the cross-references under TITLES.

†*Annulina*; DELAGE (54) p. 337.

Apodogaster; DELAGE (54) p. 328.

Aspidochirotidae defined as Suborder (p. 319), with Fam. *Holothuri*-, *Synallact*-, *Elasipod*-, & *Pelagothuri*-inae (p. 322); DELAGE (54).

Bathyherpystikes; DELAGE (54) p. 323.

Bathyplores; DELAGE (54) p. 323.

Benthodytes; DELAGE (54) p. 328.

Benthogone; DELAGE (54) p. 326.

Benthothuria; DELAGE (54) p. 323.

Capheira; DELAGE (54) p. 327, figg.

Caudina; DELAGE (54) p. 331, figg. *C. arenata*; WEYSSE (284) p. 104, fig.: descr., range; CLARK (38) p. 569, pls. xi, xiii. *C. pigmentosa*, Tierra del Fuego, & *C. rugosa*, Picton Id., **n. spp.**; PERRIER (212) p. 16.

Chiridota; DELAGE (54) p. 337, figg. *C. contorta*; LUDWIG (164) p. 690: PERRIER (212) p. 17. *C. marenzelleri* **n. sp.**, Magellan Str.; PERRIER (214). *C. pisanii*; PERRIER (212) p. 17. *C. rotiferu*; LUDWIG (164) p. 690.

Chiridotinae, Sub-fam.; DELAGE (54) p. 337.

Colochirus; DELAGE (54) p. 319: doubted, vide *Cucumaria*; PERRIER (213) p. 370. *C. montagui*; MALARD (179) p. 195.

Cucumaria, descr.; DELAGE (54) p. 319, figg. *C. brunnea*; MAR. BIOL. ASS. (184) p. 206. *C. convergens*, vide sub *Psolidium*. *C. crocea* (p. 687), *C. curata* (p. 688); LUDWIG (164). *C. filholi*, perhaps only var. of *C. alba*; PERRIER (213) p. 367. *C. frondosa*; DEKHUYZEN (51): growth stages; MICHAÏLOVSKIJ (192) p. 159: descr., range, that recorded from Florida reef probably *C. japonica*; CLARK (38) p. 566, pls. xi, xii. *C. glacialis*; LUDWIG (164) p. 688: MICHAÏLOVSKIJ (192) p. 159. *C. hyndmani*; MAR. BIOL. ASS. (184) p. 206. *C. laevigata*; LUDWIG (164) p. 688: PERRIER (212) p. 14. *C. lefevrei*; PACE (205). *C. leonina*, sclerites; PERRIER (212) p. 14. *C. montagui* Flem. non Norman; PACE (205). *C. normani* **n. sp.**, Plymouth, 10 fin., incl. 'Holothuria pentactes var.' Montagu 1808 & '*C. montagui*' Norm. 1893, specimen A.; PACE (205) p. 309: MAR. BIOL. ASS. (184) p. 206. *C. ocnoides* redescri.; PERRIER (213). *C. parva*; LUDWIG (164) p. 688: PERRIER (212) p. 14. *C. pentactes*; WOODCOCK (292): Linne's sp. indeterminable, name rejected; PACE (205). *C. planci*; WOODCOCK (292): NOBRE (199). *C. pulcherrima*, descr., range; CLARK (38) p. 567, pls. xi, xii. *C. savicola*, MAR. BIOL. ASS. (184) p. 206: incl. '*C. montagui*' Norm. 1893, specimens B, C; PACE (205). *C. tabulifera* **n. sp.**, Franklin B., Punta Arenas; PERRIER (212) p. 14.

Deima described; DELAGE (54) p. 324, figg.

Deimatinae, Subfam.; DELAGE (54) p. 325.

Dendrochirotidae defined as Suborder, with Fam. *Dendrochirot*- & *Rhopalodin*-inae; DELAGE (54) p. 319.

Dendrochirotinae, defined with list of genera; DELAGE (54) p. 319.

Elasipodinae defined with list of genera; DELAGE (54) p. 324.

Elpidia; DELAGE (54) p. 328. *E. glacialis*, minor variations; MICHAÏLOVSKIJ (192) p. 158, 184.

Elpidiidae, Subfam.; DELAGE (54) p. 328.

Enypniastes; DELAGE (54) p. 329.

Euphronides; DELAGE (54) p. 328, figg.

Eupyrgus; DELAGE (54) p. 331. *E. scaber*; MICHAÏLOVSKIJ (192) p. 161.

Gastrothuria; DELAGE (54) p. 323.

Haplodactyla; DELAGE (54) p. 331, fig.

†*Hemisphaerantus*; DELAGE (54) p. 337.

Holothuria descr.; DELAGE (54) p. 322. *Holothuria* [sic] sp.; NOBRE (198) p. 56. *H. atra*; GARDINER (95) p. 339. *H. forskali*; WOOD-

COCK (292). *H. maculata*; GARDINER (95) p. 339, 392. *H. nigra*; MAR. BIOL. ASS. (184) p. 207; ROY. COLL. SURGEONS (237) p. 5. *H. (?) patagonica* n. sp., Santa Cruz, Patagonia; PERRIER (212) p. 13. *H. poli*; POLARA (220). *H. tubulosa*; l. c.: CLERC (41): HENRI (116) p. 17-20; LANZI (151).

Holothuriinae defined with list of genera; DELAGE (54) p. 322.

Hydaemon; DELAGE (54) p. 326, figg.

Irpa; DELAGE (54) p. 328.

Kolga; DELAGE (54) p. 329, figg.

Labidodemas; DELAGE (54) p. 322.

Labidoplax; DELAGE (54) p. 337.

Laetmogone; DELAGE (54) p. 326, figg.

Laetmophasma; DELAGE (54) p. 326.

Ludwigia Reiffen; DELAGE (54) p. 320: rejected; PERRIER (213) p. 370.

Meseres; DELAGE (54) p. 323.

Mesothuria; DELAGE (54) p. 324. *M. interstitialis*; KIAER (140).

Molpadia descr.; DELAGE (54) p. 331.

Molpadiidae defined as Suborder; DELAGE (54) p. 319.

Muelleria; DELAGE (54) p. 323. *M. lecanora*; DOFLEIN (64) p. 126.

Myriotrochinae, Subfam.; DELAGE (54) p. 337.

Myriotrochus; op. cit. p. 338, figg. *M. rinkii*; MICHAILOVSKIJ (192) p. 162.

Oneirophanta; DELAGE (54) p. 325, figg.

Orcula; DELAGE (54) p. 320.

Orphnurgus; DELAGE (54) p. 326.

Paelopatides; DELAGE (54) p. 323.

Pannychia; DELAGE (54) p. 326.

Parelpidia; DELAGE (54) p. 328.

Paroriza; DELAGE (54) p. 323.

Pelagothuria descr.; DELAGE (54) p. 329, figg.

Pelagothuriinae defined with list of genera; DELAGE (54) p. 329.

Pentagone descr.; DELAGE (54) p. 328.

Pentadactyla; DELAGE (54) p. 322.

Phyllophorus; DELAGE (54) p. 320, fig. *P. drummondi*; MALARD (179) p. 195; MICHAILOVSKIJ (192) p. 160; ÖSTERGREN (203). *P. urna*; LUDWIG (164) p. 689.

†*Priscopodatus*; DELAGE (54) p. 323.

Protankyra; DELAGE (54) p. 337.

Pseudocucumis; DELAGE (54) p. 320. *P. mixta*, ÖSTERGREN (203).

Pseudopsolus; DELAGE (54) p. 321.

Pseudostichopus; DELAGE (54) p. 324.

Psolidium; DELAGE (54) p. 320. *P. convergens* (Herouard sub *Cucumaria*); *P. dorsipes*; PERRIER (212) p. 15. *P. nutriens*; LUDWIG (164) p. 689.

Psolus; DELAGE (54) p. 320. *P. antarcticus*; LUDWIG (164) p. 689: distinct from *P. squamatus*; PERRIER (212) p. 15. *P. ephippifer*; LUDWIG (164) p. 689. *P. fabricii*; †MADSEN (177) p. 530; MICHAILOVSKIJ (192) p. 160. *P. phantapus*; l. c. *P. squamatus* var.; PERRIER (212) p. 15. *P. valvatus* n. sp., Trondhjem fjord, 40-100 m.; ÖSTERGREN (203).

Psychotrepes; DELAGE (54) p. 328.

Psychropotes descr.; DELAGE (54) p. 327, fig.

Psychropotidae Subfam.; DELAGE (54) p. 327.

Rhabdomolgus, probably young *Synapta*; DELAGE (54) p. 337.

Rhipidothuria; DELAGE (54) p. 328.

Rhopalodina descr.; DELAGE (54) p. 321.

Rhopalodininae, defined with list of genera; DELAGE (54) p. 321.

Scotoanassa; DELAGE (54) p. 329, figg.

Scotodeima; DELAGE (54) p. 326.

Scotoplanes; DELAGE (54) p. 328, fig.

Semperia drumondi Hérouard ; PACE (205).

Stichopus ; DELAGE (54) p. 322, figg. *S. chloronotus* ; GARDINER (95) p. 339.

S. regalis ; BERTRAND (27) : DUBOIS (72) : HENRI (116) p. 19. *S. tremulus* ; KIAER (140).

Synallactes descr. ; DELAGE (54) p. 323. *S. moseleyi*, not a *Bathyplores* ; PERRIER (212) p. 13.

Synallactinae, defined with list of genera ; DELAGE (54) p. 323.

Synapta descr. ; DELAGE (54) p. 332, figg. : *auricularia* ; LO BIANCO (154) p. 55, pl. xxxiv. *S. digitata* ; MAR. BIOL. ASS. (184) p. 206. *S. inhaerens* ; l. c. : MALARD (180) : descr., range ; CLARK (38) p. 571, pls. xi, xiv. *S. cf. ooplax* ; GARDINER (95) p. 338. *S. roseola*, descr., range ; CLARK (38) p. 571, pls. xi, xiv. *S. vivipara* ; LUDWIG (164) p. 689.

Synaptinae Subfam. ; DELAGE (54) p. 337.

Theelia ; DELAGE (54) p. 320.

Thyone ; DELAGE (54) p. 320, figg. *T. briareus*, descr., range, habits ; CLARK (38) p. 567, pls. xi, xiii. *T. fusus* ; MALARD (179) p. 195 : MAR. BIOL. ASS. (184) p. 206. *T. lechleri*, sclerites ; PERRIER (212) p. 15. *T. raphanus* ; MALARD (179) p. 195. *T. rubra* ; LUDWIG (164) p. 689. *T. scabra*, descr., range ; CLARK (38) p. 568, pls. xi, xiii. *T. spectabilis*, calcareous ring ; PERRIER (212) p. 15. *T. unisemita*, descr., range ; CLARK (38) p. 569, pls. xi, xii.

Thionepsolus [sic. err. pro *Thyonepsolus*] ; DELAGE (54) p. 320.

Trochoderma ; DELAGE (54) p. 337. *T. elegans* ; MICHAÏLOVSKIÏ (191).

Trochodota ; DELAGE (54) p. 337. *T. purpurea* ; PERRIER (212) p. 17.

Trochostoma ; DELAGE (54) p. 332, fig. *T. boreale* ; MICHAÏLOVSKIÏ (192) p. 161. *T. oöliticum*, incl. *T. boreale* but not *T. arcticum* or *T. turgidum*, descr., range ; CLARK (38) p. 570, pls. xi, xiii.

Ypsilothuria ; DELAGE (54) p. 321.

(C).—ECHINOIDEA.

Classification of *Ech.*, phylogenetic, causes of change ; DOUVILLÉ (66) p. 72. *Echinidia* divided into Subclass 1. *Regulariae* with Orders *Palechinida*, *Echinothurida*, *Cidarida*, & *Diademida*, 2. *Irregulariae* with Orders *Holactypida*, *Clypeastrida*, & *Spatangida* ; DELAGE (54). Diagnoses of Orders, Families, and Genera, with lists of spp. and distrib., continuing *Regularia* from *Temnopleuridae*, and all *Irregularia* ; MEISSNER in HAMANN (112) [for scheme of classification down to Sub-famm. see Introduction to last year's Record, p. 6]. *Echinoidea Regularia*, classifications of Pomel, Duncan, Lambert, Gregory, and Bell discussed, following proposed : Order I *Entobranchiata*, with one Suborder, *Cidaroida*, Famm. *Archaeocidaridae* & *Cidaridae* ; Order II, *Ectobranchiata* with Suborders 1, *Streptosomata*, Famm. *Lepidocentridae*, *Echinothuridae*, 2, *Stereosomata*, Tribus i *Diademina*, Famm. *Aspidodiademata*, *Diademata*, *Pseudodiademata*, *Micropyg-*, *Pedin-*, *Hemicidaridae*, Tribus ii *Salenina*, Fam. *Salenidae*, Tribus iii, *Phymosomina*, Famm. *Arbaci-*, *Phymosomat-*, ? *Stomechinidae*, Tribus iv, *Echinina*, Famm. *Stomopneust-*, *Temnopleur-*, *Echin-*, *Toxopneust-*, *Echinometridae* ; MORTENSEN (195) p. 47 [for smaller divisions see under Fam. names ; N.B. that Mortensen's Tribus are Superfamilies, whereas Lambert's are Sub-families]. Palaeozoic *Ech.* classified and revised, see further sub *Palaeëchinoidea* ; KLEM (142). Key to spp. of *Ech.* in East Indian Archipelago, see list III, A, iii ; DE MEIJERE (57) p. 220-237.

Taxonomic value of the following characters :—Pedicellariae, Mortensen's classification discussed by DE MEIJERE (57) p. 248, ridiculed by

- AGASSIZ (3) passim. Crenulation of tubercles, slight value; DE MEIJERE (57) p. 24. Radioles, in *Clypeastroida*; op. cit. p. 104. Fascioles, not safe; BATHER (18) p. 298: doubtful; DE MEIJERE (57) p. 165, 241: Subanal, in Spatangoids; AGASSIZ (3) p. 179.
- Abatus cavernosus*, specimen 1.6 mm. long descr.; AGASSIZ (3) p. 211, pl. xcix.
- Acanthocidaris*; DELAGE (54) p. 227.
- Aceste* diagnosis; MEISSNER in HAMANN (112) p. 1393: descr.; DELAGE (54) p. 271, fig. *A. bellidifera*, radioles; DE MEIJERE (57) p. 196, pl. xxiii.
- †*Acrocidaris granulosa*, not this genus; LAMBERT in Review of LISSAJOUS (153).
- †*Acrosalenia*; DELAGE (54) p. 231. *A. chartroni* n. sp., Hettangian of Vendée; LAMBERT (148) p. 538, pl. xviii. *A. decorata*; STRANGWAYS (266) p. 40, 49. *A. koenighi* [sic]; GLANGEAUD (101) p. 33. *A. spinosa*; CLERC (42) p. 99: apical system, ambulacra; AGASSIZ (3) p. 37, 41, & fig.
- Ærope*; DELAGE (54) p. 272: diagnosis; MEISSNER in HAMANN (112) p. 1393: retained among *Brissina*, but with ananchytid affinities; AGASSIZ (3) p. 197. *A. fulva* descr. and compared with *A. rostrata*; op. cit. p. 194, pls. lv, lxi, lxii: radioles, pedicellariae; DE MEIJERE (57) p. 195, pl. xxiii.
- Æropidae* discussed; DE MEIJERE (57) p. 243.
- Agassizia*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1392: apical system (p. 173, f. 287, pl. cviii), *A. excentrica* compared with *Spatagoderma* (p. 198, figg., pl. cviii); AGASSIZ (3).
- Alexandria* discussed; DE MEIJERE (57) p. 136: diagnosis; MEISSNER in HAMANN (112) p. 1383.
- Amblypneustes*; DELAGE (54) p. 241: distinguished from *Microcyphus* & *Holopneustes* (p. 102), *A. formosus*, pedicellariae, radioles, &c. (p. 103, pl. ii, vi, vii); MORTENSEN (195). *A. griseus*; op. cit. p. 105: great variation, probably incl. *A. formosus*, *pallidus*, & *ovum*; HALL (111) p. 72. *A. grossularia*, holotype examined, pedicellariae &c. (p. 105, pl. vi, vii), *A. ovum*, pedicellariae &c., distinguished from *A. formosus* and from various spp. wrongly referred here by Bell, Ramsay, et al. (p. 103, pl. vii); MORTENSEN (195): vide etiam sub *Microcyphus zigzag*. *A. pallidus*? pedicellariae, radioles, &c. (p. 104, pl. ii, vi, vii). *A. vegae*, syn. of *Mespilia globulus* (p. 106); op. cit.
- †*Amblypygus dilatatus*; GOURDON (102) p. 221.
- Amphidetus cordatus*; +BELLINI (23) p. 5: KIAER (140): MALARD (179) p. 194.
- †*Amphiope*:—*A.* sp. ind. fragments (p. 175, pl. iv), *A. bioculata*, specimen figd. Quenstedt, 1875, descr. incl. *A. bisperforata* Parkinson non Leske, distrib. (p. 173); SCHUETZE (251).
- Amphipneustes*; DELAGE (54) p. 273: discussed; AGASSIZ (3) p. 178: DE MEIJERE (57) p. 240: diagnosis; MEISSNER in HAMANN (112) p. 1388.
- †*Ananchites* (vel *Ananchytes*), vide *Echinocorys*.
- Ananchytinae*; DELAGE (54) p. 266.
- Anochanus* diagnosis; MEISSNER in HAMANN (112) p. 1386. *A. sinensis*; LUDWIG (164) p. 691.
- Anomalanthus* diagnosis; MEISSNER in HAMANN (112) p. 1382.
- Anthechinus roseus*; MORTENSEN (195) p. 98.
- Anthocidaris*; DELAGE (54) p. 245: diagnosis; MEISSNER in HAMANN (112) p. 1374.
- Aphanopora*; DELAGE (54) p. 264: diagnosis; MEISSNER in HAMANN (112) p. 1386: ditto, & *A. echinobrissoides* descr.; DE MEIJERE (57) p. 142, pls. vi, xix.
- †*Apodiadema* validity questioned; LISSAJOUS (153) p. 114.

†*Arachniopleurus*; MORTENSEN (195) p. 112.

Arachnoides diagnosis; MEISSNER in HAMANN (112) p. 1382: name rejected, should be *Echinodiscus*; FOURTAU (83) p. 424. *A. placenta*; DE MEIJERE (57) p. 137, pl. xix: MARTENS (185).

Araeosoma descr.; DELAGE (54) p. 223, fig.: criticised; AGASSIZ (3) p. 83. *A. ousteni* (corr. *oustoni*) n. sp., Sagami B., 50 fm.; MORTENSEN (194) p. 82, pl. ii, v. *A. tessellatum*, radioles, pedicellariae, spicules; DE MEIJERE (57) p. 35, 250, pl. xiii: ? juv. = *Asthenosoma gracile* A. Ag. Challenger Stat. 219; MORTENSEN (194) p. 86, pl. iv.

Arbacia; DELAGE (54) p. 237: versus *Echinocidaris*, discussed; LORIOL (162) p. 13: development of coronal plates; AGASSIZ (3) p. 54, pls. liii, liv: experiments on sperm-ovum; LYON (171). *A. dufresnii*, incl. *A. schytei* & *A. alternans*, descr., with young; LORIOL (162) p. 8, pl. ii. *A. nigra*; DE MEIJERE (57) p. 207. *A. punctata*, pluteus; WEYSSE (284) p. 100, fig. *A. punctulata*, descr., range; CLARK (38) p. 563, pl. vii. *A. pustulosa*; DI MAURO (63). *A.* [? *pustulosa*?]; JANSSENS (136).

Arbaciinae defined with list of genera; DELAGE (54) p. 237.

Arbacia diagnosis; MEISSNER in HAMANN (112) p. 1367. *L. forbesiana* referred to *Prionechinus* (q. v.); DE MEIJERE (57) p. 71.

†*Archaeocidaridae* defined; KLEM (142) p. 45.

†*Archaeocidaris*; DELAGE (54) p. 218: defined, synn. *Echinocrinus*, *Palaeocidaris*; KLEM (142) p. 45. *A.* sp.; BEEDE & ROGERS (21): HIND (123) pp. 186, 188: ?; KITTL (141) p. 685, pl. xxii: Etheridge 1892, Julien 1896, Meek 1859, & Stacke 1877; KLEM (142) p. 65. *A. aculeatus* (p. 45), *A. agassizi* (p. 46), & *A. biangulatus* (p. 47) descr.; KLEM (142). *A.* cf. *biangulata*; RICHARDSON (227) p. 37. *A. cratis* (p. 47), *A. dininni*, & *A. edgarensis* (p. 48) descr., *A. glabrispina* (p. 62), *A. gracilis* descr. (p. 49), *A. grueneri* (p. 62); KLEM (142). *A. harteiana* vide *Perischodonus hartei*. *A. illinoisensis* (p. 49) & *A. keokuk* (p. 50) descr.; KLEM (142). *A. keyserlingi*, radioles; KITTL (141) p. 684. *A. konincki*; KLEM (142) p. 63. *A. ladina*; l. c.: radioles; KITTL (141) p. 684. *A. legrandensis* (p. 50), *A. longispinus*, *A. megastylus* (p. 51), *A. mucronatus* (52), *A. nerii* [sic], incl. *Cidaris protei* (p. 52), *A. newberryi* (p. 53), *A. norwoodi*, *A. ornatus* (p. 54), all descr., *A. ourayensis*, *A. priscus* (p. 63); KLEM (142). *A. regimontana* n. sp., Visean of Königsberg near Giessen, interambulacral; PARKINSON (206) p. 365, pl. xv. *A. rossicus* descr. (p. 55), var. *schellwieni*, *A. scotica* Smith [! i.e. J. Young], *A.* (?) *selwyni* (p. 64), *A. shumardanus* descr. (p. 56), *A. spinoclavatus* descr. (p. 57), *A. tennesseae*, *A. tirolensis* (p. 64), *A. trautscholdi* (p. 65), *A. triplex* descr. (p. 57), *A. triserialis* & *A. triserratus* descr. (p. 58), *A. tridifer* descr. (p. 59); KLEM (142). *A. urei*; FRAIPONT (85) p. 11, pl. i: HIND (123) p. 192: PEACH (209) p. 848: descr.; KLEM (142) p. 59. *A. vetustus* descr.; KLEM (142) p. 61. *A. wervekei*; FRAIPONT (85) p. 11, pl. i: KLEM (142) p. 65. *A. wortheni* descr.; KLEM (142) p. 61.

Archaeocidarisinæ defined with list of genera; DELAGE (54) p. 218.

Archaeopneustes, genotype *A. hystrix* is syn. of *Paleopneustes*, but [*A. abruptus*] is more allied to *Amphipneustes*; AGASSIZ (3) p. 186.

Argopatagus, diagnosis; MEISSNER in HAMANN (112) p. 1401: & *Geniopatagus* compared with *Palaeotropus*, *Homolampas*, *Phrissocystis*, & *Palaeobrissus* (p. 172), *A. vitreus* (p. 172, 183, pl. xci); AGASSIZ (3).

Aspidodiadema; DELAGE (54) p. 230, fig. *A. antillarum*, tubercles, pedicellariae, referred to *Dermatodiadema* (q. v.) = *Plesiodiadema* (p. 37, pl. iii-v), *C. jacobyi*, spicules, pedicellariae, *A. microtuberculatum*, specimen fr. Challenger Stat. 134 taken as genotype, tubercles, pedicellariae, referred to *Dermatodiadema* (q. v.) = *Plesiodiadema* (p. 36, pl. iii-v); MORTENSEN (195). *A. nicobaricum*, descr.; DE MEIJERE

- (57) p. 44, pls. iii, xiii: pedicellariae; MORTENSEN (195) p. 36. *A. tonsum*, pedicellariae, distrib.; op. cit. p. 34, pl. iii, v: radioles, pedicellariae, spicules; DE MEIJERE (57) p. 44, pl. xiii.
- Aspidodiademataidae* accepted; MORTENSEN (195) p. 43.
- Aspidodiademina* defined with list of genera; DELAGE (54) p. 230.
- Asterostoma* discussed; DE MEIJERE (57) p. 242.
- Asthenosoma* descr.; DELAGE (54) p. 222, figg. *A. coriaceum*, abactinal area; AGASSIZ (3) p. 115, pl. lii. *A. gracile*, vide sub *Calveria* et *Araeosoma tessellatum*. *A. grubei* compared with *A. varium*; DE MEIJERE (57) p. 33, pl. xii. *A. heteractis* (p. 88), *A. ijimai*, madreporite, pedicellariae, spicules, radioles (p. 87, pl. iii, v); MORTENSEN (194). *A. longispinum* vide *Calveria gracilis*. *A. pellucidum* juv. descr.; AGASSIZ (3) p. 113, pl. li. *A. varium*; MARTENS (185) p. 132. *A.* (err. pro *Phormosoma*) *zealandiae* (q. v.); AGASSIZ (3) p. 76.
- Astriclypeus* diagnosis; MEISSNER in HAMANN (112) p. 1384.
- †*Astrodapsis* sp. nondescr.; HAEHL (110) p. 24.
- Astropyga*; DELAGE (54) p. 232. *A. denudata*, descr.; DE MEIJERE (57) p. 57, pls. iv, xiv. *A. elastica*, holotype syn. of *A. radiata*, but Bell 1899 is a *Micropyga*; MORTENSEN (195) p. 20. *A. pulvinata*; DE MEIJERE (57) p. 206: pedicellariae, specimens recorded fr. western Pacific are *A. radiata* or *Chaetodiadema*; MORTENSEN (195) p. 20, pl. iii, iv. *A. radiata*; BELL (22A): MARTENS (185) p. 132: DE MEIJERE (57) p. 206, and young, p. 56: incl. *A. elastica*, *freudenbergi*, *mossambica*, tubercles, radioles, spicules, pedicellariae; MORTENSEN (195) p. 18, pl. iii-v.
- †*Atelospatangus*; AGASSIZ (3) p. 200: DELAGE (54) p. 268.
- Boletia bizonata* is a *Psammechinus*; MORTENSEN (195) p. 120.
- †*Bothriocidaridae* defined, as Fam.; KLEM (142) p. 14: as Suborder; DELAGE (54) p. 217.
- †*Bothriocidaris* descr.; DELAGE (54) p. 217, fig.: compared to *Phormosoma* juv.; AGASSIZ (3) p. 79, 80: defined; KLEM (142) p. 14. *B. globulus*, descr.; KLEM (142) p. 15: anal system and interambulacra; AGASSIZ (3) p. 80. *B. phaleni* [sic] descr.; KLEM (142) p. 15.
- †*Bothriocidaroida* defined; KLEM (142) p. 14.
- Breynia*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1400. *B. australasiae*, fascioles; DE MEIJERE (57) p. 192.
- †*Brissoma*; DELAGE (54) p. 270.
- †*Brissopneustes suecicus*; TÖRNEBOHM (267) p. 143.
- Brissopsis* (seu *Bryssopsis*); DELAGE (54) p. 270, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1395. †*B.* sp. nondescr.; BARRON (15) p. 607. *B. columbaris* compared with *B. lyrifera* & *Toxobrissus*; AGASSIZ (3) p. 190, pls. c, cii, ciii. *B. luzonica*, pedicellariae, spicules, young, comparison with *B. lyrifera*; DE MEIJERE (57) p. 188, pls. v, xxiii: criticised; AGASSIZ (3) p. 192. *B. lyrifera*; BELL (22A). †*B. nicoleti*; SCHUETZE (251) p. 185. †*B. pechiotii*; BELLINI (23) p. 5.
- Brissus* (seu *Bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1394. *B. carinatus*; DE MEIJERE (57) p. 184: †FOURTAU (83) p. 444.
- Bryssopsis* & *Bryssus*, vide *Brissopsis* & *Brissus*.
- Caenopedina*; DELAGE (54) p. 233. *C. mirabilis*, spicules, pedicellariae; MORTENSEN (195) p. 34, pl. iii, iv.
- Calveria* W. Thoms.; DELAGE (54) p. 223: name not applicable to an *Echinothurid* because originally given to an *Asterid*; AGASSIZ (3) p. 84. *C. gracilis*, radioles, pedicellariae; DE MEIJERE (57) p. 34, 205, pl. xiii: incl. *Asthenosoma longispinum* Yosh.; MORTENSEN (194) p. 89.
- Calymne* descr.; DELAGE (54) p. 265: diagnosis; MEISSNER in HAMANN (112) p. 1403: plastron; AGASSIZ (3) p. 154.
- †*Caratomus*:—*C.* sp. radioles; SCHLUETER (245). *C. laubei*; ZAHÁLKA (296) p. 18, 149. *C. peltiformis*; TÖRNEBOHM (267) p. 136.

- +*Cardiaster*:—*C. ananchytis*; FLEGEL (79): ZAHÁLKA (296) p. 44, 149: (olim *Micraster* cf. *cortestudinarium*); PETRASCHECK (216): great size, radioles attached; ROWE (235) p. 252, 262, 294. *C. cotteavi*; ROWE (235) p. 248, 293. *C. patagonicus* Steinm. MS.; WILCKENS (287). *C. pilula*; BERG (24): ROWE (235) p. 239, 265, 294.
- Cassidulinae* defined with list of genera in Subfam. *Echinon-*, *Nucleolit-*, *Echinolamp-inae*; DELAGE (54) p. 263.
- +*Cassidulus* [fig. 340, called *C. lapiscanceri* is really *Leodia hexapora*, fide LAMBERT]; DELAGE (54) p. 264, figg. *C. elongatus*; BERG (24). *C. eugeniae*, apical system: AGASSIZ (3) p. 120, fig.
- +*Catopygus*:—*C. albensis*; PETRASCHECK (216): ZAHÁLKA (296) p. 18, 71, 149. *C. fastigatus*; op. cit. p. 149. *C. minor*, *C. rotundus*; TÖRNEBOHM (267) p. 136.
- Centrocidaris* **n. sg.** [of *Goniocidaris*?] for *G. canaliculata* & *G. doederleini* (p. 32), the latter descr. (p. 33, pls. v, xiv), shape of test (p. 1) anal plates in young (p. 7, f. 25); AGASSIZ (3).
- Centrostephanus*; DELAGE (54) p. 232. *C. longispinus*, spicules, pedicellariae (p. 32, pl. iv, v); *C. rodgersi*, spicules, pedicellariae (p. 33, pl. iii-v); MORTENSEN (195).
- Chaetodiadema*; DELAGE (54) p. 232. *C. granulatum*, descr., also young; DE MEIJERE (57) p. 54, 206, pls. iii, xi, xiv: detailed descr., also young fr. Maldives; MORTENSEN (195) p. 22, pl. i, iii, iv, v. *C. japonicum* **n. sp.** Sagami B., 30 fm.; op. cit. p. 28, pl. ii.
- Chondrocidaris* (vide et. *Cidaris*); DELAGE (54) p. 227.
- +*Chrysomelon pictum* vide *Leiopodina tallavignesi*.
- +*Chuniola caroliniae*, Gagel's pl. xxiv, f. 3, not this sp.; LAMBERT in Review of GAGEL.
- Cidarida* defined (p. 216) descr. (p. 225), with Fam. *Cidarisinae* (p. 226); DELAGE (54).
- Cidaridae*, brief systematic account; FRITEL (86). Vide *Centrocidaris*.
- Cidaris* (vide etiam s.-gg. *Centro-*, *Chondro-*, *Disco-*, *Doro-*, *Gonio-*, *Leio-*, *Podo-*, *Poro-*, *Rhabdo-*, *Stephano-*, *Stereo-cidaris*, and *Phyllacanthus*) descr.; DELAGE (54) p. 226, figg.: sensu Mortensen, heterogeneous; AGASSIZ (3) p. 23. *C. sp.*; BELL (22A). +*C. sp.*; BOEHM (28) p. 8, pl. i: BURNET (33): USSING (275) p. 84, fotogr.: KITTL (141) p. 703. +*C. abichi*; SIEMIRADZKI (255) p. 140. +*C. acicularis*; CHECCHIA (37). *C. affinis*; AGASSIZ (3) p. 22. +*C. amalthei*; SCHAEFER (242) p. 34. +*C. andreae*; LISSAJOUS (153) p. 181: allied to *C. cucumifera*; LAMBERT in Review. *C. annulifera* Lam. is var. or close ally of *C. baculosa*; MORTENSEN (195) p. 6. +*C. asperula*; COLLET (44) p. 70. +*C. avenionensis*; COUFFON (46) p. 42: radioles, measurements, distrib.; SCHUETZE (251) p. 162, pl. ii: differs fr. this sp. in shape and size; LAMBERT in Review. *C. baculosa*; MARTENS (185):=*pistillaris*, compared with *C. annulifera*, divided according to radioles into varr. *typica*, *annulifera*, *brevicollis* **var. nov.** and others; DE MEIJERE (57) p. 9, pls. ii, xi. +*C. berthelini*; COLLET (44) p. 70. *C. cf. biformis*; KITTL (141) p. 703. *C. (Stephanocidaris) bispinosa*, notes chiefly on radioles, comparison with *Rhabdocidaris annulifera*; DE MEIJERE (57) p. 4, 204, pls. i, ii, +*C. blumenbachi* & +*C. cervicalis*; MAIRE (178): ROLLIER (230) p. 466, 467. +*C. clavigera*; ROWE (235) p. 252, 293. +*C. coronata*; FÜGGER (92) p. 339; MAIRE (178): SIEMIRADZKI (255) p. 140. +*C. cragini* **n. sp.**, Lower Cretaceous, Honduras, radiole only; LORIOI (162) p. 58, pl. iv. +*C. cucumifera*; RICHE (228) p. 208. +*C. curvata*; ROLLIER (230) p. 464. +*C. dissimilis*; STRANGWAYS (266) p. 80. +*C. aff. dorsata*; KITTL (141) p. 579. +*C. edwardsi*?; SHORT (254). *C. (Histocidaris) elegans*, both crenulate and smooth tubercles, radioles, pedicellariae, spicules &c. (p. 24, pl. xii) also young of 3-7 mm. diam. (p. 25, pls. ii, xii); DE MEIJERE (57). +*C. erbaensis*; MARIANI (183) p. 154. +*C. filograna*; SIEMIRADZKI (255) p. 140. *C. (Petalocidaris?) fimbriata*

- n. sp.** off Ceram, 567 m.; DE MEIJERE (57) p. 22, pls. iii, xii. +*C. florigemma*, MAIRE (178): SIEMIRADZKI (255) p. 140: var. *philastarte*; ROLLIER (230) p. 466. *C. (Petalocidaris) florigera*, radioles, spicules, pedicellariae; DE MEIJERE (57) p. 21, pl. xii. +*C. fusiformis*; COLLET (44) p. 77. +*C. gaultina*; FEARNSIDES (76): STRANGWAYS (266) p. 78. +*C. gibberula*; COLLET (44) p. 76. *C. (Chondrocidaris) gigantea* (p. 204), *C. glandulosa* **n. sp.** Java Sea, 69 m. (p. 13, pl. i); DE MEIJERE (57). +*C. gourdoni*; GOURDON (102) p. 222. +*C. grandaeva*; LANGENHAN (150). *C. (Stereocidaris) grandis*, radioles; DE MEIJERE (57) p. 17. +*C. helenae*, discussed; LAMBERT in Review of VINASSA. *C. (Discocidaris?) hirsutispinus* **n. sp.** Gilolo Passage, 469 m.; DE MEIJERE (57) p. 20, pl. xii. +*C. hirudo*; COLLET (44) p. 70: HINDE (125): ROWE (235) p. 256, 266, 293. +*C. histicoides*; ROLLIER (230) p. 464: WALTHER (281) p. 158. *C. (Phyllacanthus) imperialis*, incl. *P. dubius*, varr. *typica* & *fustigera* associated (p. 22). *C. (Stereocidaris) indica*, perhaps = *S. alcocki* (p. 18, pls. i, xi, xii), *C. (S.) japonica*, radioles & pedicellariae (p. 16, pl. xi); DE MEIJERE (57). +*C. lo[a]eviuscula*; LISSAJOUS (153) p. 181. +*C. cf. limaria*, radiole; SCHUETZE (251) p. 165, pl. ii. *C. luetkeni*, syn. of *Stephanocid. bispinosa*; MORTENSEN (195). *C. maculicollis*, descr.; DE MEIJERE (57) p. 15, pls. iii, xi. +*C. marginata* (p. 181), *C. aff. martini* (p. 180); LISSAJOUS (153). *C. metularia*; HERDMAN (120) p. 138: notes on radioles in young and adult; DE MEIJERE (57) p. 7: var. *spuria*; MARTENS (185) p. 132. *C. (Histocidaris) misakiensis*, descr. & compared with *Porocidaris milleri*; DE MEIJERE (57) p. 27, pls. ii, xii. *C. papillata*; +JAHN (135): NOBRE (198) p. 54. +*C. cf. papillata*; LUPI (168). +*C. perlata*; COLLET (44) p. 80. +*C. perornata*; BURNET (33): HINDE (125). *C. pistillaris*; MARTENS (185). +*C. pomeli*; GOURDON (102) p. 222. +*C. pretiosa*; ZLATARSKI (299). +*C. propinqua*; SIEMIRADZKI (255) p. 140. +*C. regnyi* **n. sp.**, Norian of Sutorman, Montenegro, based on radioles figd. VINASSA DE REGNY (315) Zool. Rec. 1903; LAMBERT in Review. *C. reini*, small individuals, notes chiefly on radioles; DE MEIJERE (57) p. 5, pls. i, xi. +*C. reussi*; JAHN (134) p. 86. +*C. roemeri*; KITTL (141) p. 645. +*C. sceptrifera*; BURNET (33): COLLET (44) p. 77: JAHN (134) pp. 81, 86: ROWE (235) p. 252, 256, 266, 293. *C. serrata*; +COLLET (44) p. 76: (*Discocidaris?*), spicules & pedicellariae figd.; DE MEIJERE (57) p. 19, pl. xii. +*C. smithi*; STRANGWAYS (266) p. 40, 49, 54, 59. +*C. sorigneti*; JAHN (134) p. 86, & (135): distinguished from *C. clavigera*; JUKES-BROWNE (137) p. 456. +*C. spinulosa*; RICHE (228) p. 209. +*C. striato-granosa*; CHECCHIA (37). +*C. subularis*; CHECCHIA (37). +*C. subvesiculosa*; JAHN (134) pp. 81, 82, 86: ROWE (235) p. 252, 256, 266, 293. +*C. cf. tessurata*; PATRINI (208). *C. verticillata*; MARTENS (185) p. 132: notes on radioles; DE MEIJERE (57) p. 8. +*C. vesiculosa*; ARMASCHESKY (14): JAHN (135): STRANGWAYS (266) p. 80. +*C. zschokkei*; RICHE (228) p. 209.
- Cidarisiinae* defined with list of genera; DELAGE (54) p. 226.
- +*Cidaropsis minor*; LISSAJOUS (153) p. 166.
- Cionobrissus* (seu *-bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1399.
- Clypeaster* descr.; DELAGE (54) p. 254, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1381: diagnosis, incl. *Echinorodum*; FOURTAU (83) p. 417. *C. audouini* **n. sp.** G. of Suez, on reefs; op. cit. p. 418, pl. i. *C. humilis* (= *rosaceus*); HERDMAN (120) p. 141. +*C. priemi*; FOURTAU (83) p. 421, fig. *C. rarispinus*, descr., distinguished from *Alexandria magnifica*; DE MEIJERE (57) p. 134, pls. vi, xviii, xix. *C. reticulatus* Leske, vide *C. scutiformis*. *C. rosaceus* L. (= *humilis* Leske, q. v.), pedicellariae & spicules, also young; DE MEIJERE (57) p. 133, pl. xviii: incl. *C. humilis*, G. of Suez & +beaches, distinguished fr. *C. priemi*;

- FOURTAU (83) p. 420, fig. *C. scutiformis*; HERDMAN (120) p. 141 : radioles, pedicellariae, spicules; DE MEIJERE (57) p. 131, pl. xviii : incl. *C. reticulatus* Leske, G. of Suez & beaches; FOURTAU (83) p. 422. *C. testudinarius*; MARTENS (185).
- Clypeastrida* defined (p. 248) descr. (p. 249) with Famm. *Fibul-*, *Clypeastr-*, & *Scutell-inae* (p. 254); DELAGE (54).
- Clypeastrinae* defined with list of genera; loc. cit.
- Clypeastroida* systematic value of various characters, esp. radioles; DE MEIJERE (57) p. 103.
- †*Clypeolampas lesteli*; ROUSSEL (232) p. 15, & (233) p. 28.
- †*Clypeus*:—*C. altus*; LISSAJOUS (153) p. 176 : distinguished from *C. ploti*; CLERC (42) p. 95. *C. deshayesi*; LISSAJOUS (153) p. 176. *C. ploti*; CLERC (42) p. 95. *C. subulatus*; STRANGWAYS (266).
- Coelopleurus* descr.; DELAGE (54) p. 237. †*C. aequis*, †*C. isabellae*; GOURDON (102) p. 224. *C. maillardi* incl. *Salmacis ?elegans* Bell; DE MEIJERE (57) p. 68.
- †*Collyrites*; DELAGE (54) p. 266, fig. *C. acuta* (p. 179), *C. analis* incl. *C. ovalis* pars. (p. 178); LISSAJOUS (153). *C. bicordata*; op. cit. p. 179 : STRANGWAYS (266) p. 30, 40, 49. *C. capistrata* & *C. elliptica*; LISSAJOUS (153) p. 179. *C. fribourgensis*; DEL CAMPANA (55) p. 267. *C. ovalis*, incl. *C. analis*; CLERC (42) p. 98. *C. ringens*; op. cit. p. 97 : incl. *C. eudesi*; LISSAJOUS (153) p. 177. *C. thermarum*; SIEMIRADZKI (255) p. 142. *C. verneuii*; DEL CAMPANA (55) p. 267.
- Colobocentrotus*; DELAGE (54) p. 246 : diagnosis; MEISSNER in HAMANN (112) p. 1377.
- †*Conoclypus* (vel -eus) descr.; DELAGE (54) p. 249. *C. conoideus*; FUGGER (92) p. 339, 345 : GOURDON (102) p. 222. *C. pyrenaicus*; loc. cit.
- †*Conoclypinæ* defined with list of genera; DELAGE (54) p. 249.
- Conolampas* diagnosis; MEISSNER in HAMANN (112) p. 1387 : maintained (p. 117), apical system (p. 173, pl. lxxv), *C. sigsbei*, details of test (p. 117, fig., pl. lxxv); AGASSIZ (3).
- Conulus*, vide *Echinoconus*.
- †*Coraster margaritæ*; GOURDON (102) p. 217.
- Cottaldia forbesiana* referred to *Prionechinus* (q. v.); DE MEIJERE (57) p. 71.
- †*Cyclaster gourdoni*; GOURDON (102) p. 221.
- †*Cyphosoma* [incl. *Phymosoma*]; DELAGE (54) p. 238. *C. archiaci*; ROUSSEL (233) p. 36. *C. corollare*; ROWE (235) p. 252, 266, 293. *C. gregoirei*; ROUSSEL (232) p. 15. *C. koenigi*; HINDE (125). *C. radiatum*; BERG (24) : ROWE (235) p. 241, 293 : et. sub *Phymosoma*; PETRASCHECK (216) : ZAHÁLKA (296) p. 18, 149. *C. regulare*, *C. tenuistriatum*; COLLET (44) p. 76.
- Cyphosomina* defined with Famm. *Arbaci-*, & *Cyphosom-inæ*; DELAGE (54) p. 237.
- Cyphosominae* defined with list of genera; DELAGE (54) p. 238.
- Cystechinus* diagnosis; MEISSNER in HAMANN (112) p. 1402 : discussed, †*C. crassus* probably not this genus (p. 157), *C. loveni* descr. (p. 158, pls. B, lxxv-lxxix), actinal area (p. 122, 123, 130, figg.), *C. wyvillei*, actinal area (p. 122, 123, 130, pl. lxxx); AGASSIZ (3).
- †*Cystocidaridae* defined as Suborder; DELAGE (54) p. 217.
- †*Cystocidaroida* defined; KLEM (142) p. 12.
- Dermatodiadema* Al. Ag. 1898, incl. *Aspidodiadema microtuberculatum*, which is genotype of *Plesiodiadema* Pomel 1883 non Duncan 1885; MORTENSEN (195) p. 38 : discussed, incl. also *Aspidodiadema antillarum*; AGASSIZ (3) p. 58 : descr.; DELAGE (54), p. 230. *D. amphigymnum*; MORTENSEN (195) p. 38 : descr.; DE MEIJERE (57) p. 47, pl. xiv. *D. globulosum* descr. (p. 60, pls. xxiv, xxvi, xxviii, xxix), *D. horridum* descr. (p. 63, pls. xxiv-xxix); AGASSIZ (3). *D. indicum*;

- MORTENSEN (195) p. 38 : descr. ; DE MEIJERE (57) p. 46, pls. iii, xiv.
D. molle; MORTENSEN (195) p. 38.
- +*Desorella* discussed (? incl. *Pachyclypeus* ; LAMBERT in Review) & *D. elata* descr. & figd. ; WOODS (293).
- Diadema* descr. ; DELAGE (54) p. 231 : diagnosis ; FOURTAU (83) p. 411.
D. antillarum, descr. (p. 14, pl. iii, v) [v. et. sub *Dermatodiadema*].
D. globulosum [ditto], distinguished from *D. saxatile*, but probably syn. of *D. savignyi* (p. 17, pl. iii), *D. lamarchi* Rouss., syn. of *D. saxatile* (p. 17), *D. mexicanum* descr. (p. 15), *D. paucispinum*, perhaps syn. of *D. savignyi* (p. 17), *D. savignyi*, descr. (p. 16, pl. iii-v) ; MORTENSEN (195). *D. saxatile* ; BELL (22A) : HERDMAN (120) p. 139 : MARTENS (185) : (= *setosum*), radioles, pedicellariae ; DE MEIJERE (57) p. 49, pl. xiv : incl. *D. setosum*, distinguished from *D. antillarum* & *D. savignyi*, descr., esp. pedicellariae, spicules, & radioles ; MORTENSEN (195) p. 9, pl. iii-v. *D. setosum*, incl. *D. savignyi* ; FOURTAU (83) p. 412. +*D. texanum* ; UDDEN (273) p. 37.
- Diadematidae*, brief systematic account ; FRITEL (87) : classification of genera, value of various characters, Fam. should include *Diadema*, *Echinothrix*, *Astropyga*, *Chaetodiadema*, *Centrostephanus*, *Lissodiadema*, *Placodiadema*, *Helikodiadema* ; MORTENSEN (195) p. 40.
- Diademida* defined (p. 216) descr. with Tribes *Diadem-*, *Salen-*, *Cyphosom-*, *Echin-ina* (p. 229) ; DELAGE (54).
- Diademina* defined with Famm. *Aspidodiadem-*, *Diadem-*, *Micropyg-*, *Pedin-*, & *Hemicidaris-inae* ; DELAGE (54) p. 230.
- Diademinae* defined with list of genera ; loc. cit.
- +*Diademopsis* :—*D. buccalis* Dumortier non Ag. is syn. of *D. serialis*, & *D. nuda* Dum. is syn. of *Palaeopedina globulus* ; LAMBERT (148) p. 544. *D. serialis* ; LISSAJOUS (153) p. 165.
- Dialithocidaris* ; DELAGE (54) p. 237 : diagnosis (p. 55), *D. gemmifera* descr. (p. 56, pls. xv, xxiii) ; AGASSIZ (3).
- +*Dictyopleurus* ; MORTENSEN (195) p. 112.
- +*Diplocidaris* ; DELAGE (54) p. 229. *D. gigantea* ; MAIRE (178).
- +*Diplopodia* ; DELAGE (54) p. 235. *D. aequale* (p. 165), *D. areolatum* (p. 163) ; LISSAJOUS (153). *D. aroviense* ; op. cit. p. 165 : MAIRE (178), *D. bipunctatum* ; LISSAJOUS (153) p. 165 : probably not this sp. ; LAMBERT in Review. *D. calloviense* (p. 162), *D. langi* (p. 164) ; LISSAJOUS (153) : cannot be Desor's sp., wh. is a *Polydiadema* ; LAMBERT in Review. *D. martini* n. sp. Lr. Callovian, Mancey nr. Tournus, cotypes Mus. Tournus, Lissajous ; LISSAJOUS (153) p. 162, pl. ii. *D. oppeli* ; WALTHER (281) p. 167. *D. taffi*, descr. ; LORIOL (162) p. 56, pl. iv. *D. texanum* ; RICHARDSON (227) p. 48.
- Diplopodidae* rejected ; MORTENSEN (195) p. 44.
- Diploporus* Trosch., rejected (p. 75) but might be used for *Salmacis dussumieri* (p. 76) ; MORTENSEN (195).
- Diplotheicanthus* diagnosis ; MEISSNER in HAMANN (112) p. 1382.
- Discocidaris* (vide etiam sub *Cidaris*) ; DELAGE (54) p. 227.
- +*Discocystis* ; KLEM (142) p. 73.
- +*Discoidea* :—*D. cylindrica* ; STRANGWAYS (266) p. 80 : WOLLEMAN (290). *D. infera*, *D. minima*, *D. pentagonalis* ; COLLET (44) p. 76.
- +*Ditremaster nux* ; GOURDON (102) p. 220.
- Dorocidaris* (vide etiam sub *Cidaris*) ; DELAGE (54) p. 228, fig. *D. bracteata* (p. 23), *D. panamensis*, descr. & discussed (p. 20, pls. i-v) shape of test (p. 1, f. 3) size of actinal system (p. 3, f. 12) anal plates in young (p. 7, f. 22, 24) growth of coronal plates (p. 9, f. 26-29 & 43-45) ; AGASSIZ (3). *D. papillata* ; DE MEIJERE (57) p. 204 : juv., anal system (p. 3, f. 14), pedicellariae (p. 22) ; AGASSIZ (3).
- +*Dysaster* :—*D. granulosus* ; WELSCH (283) p. 27 : LISSAJOUS (153) p. 180. *D. moeschi* ; loc. cit. *D. siliceus* ; SIEMIRADZKI (255) p. 142.

Dysasterinae; DELAGE (54) p. 266.

Echinanthus testudinarius; HERDMAN (120) p. 141.

Echinarachnius; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. parma*, descr., range; CLARK (38) p. 564, pl. x.

Echinina defined with Famm. *Temnopleurus*-, *Stomopneustes*-, *Echinus*-, *Toxopneustes*-, & *Echinometrinae*; DELAGE (54) p. 239.

Echininae; DELAGE (54) p. 242.

Echinobrissus, vide etiam *Nucleolites*. +*E. amplus* juv.; LISSAJOUS (153) p. 175. +*E. clunicularis*; loc. cit.: STRANGWAYS (266) p. 23, 49. +*E. depressus*, +*E. dimidiatus*; op. cit. p. 40. *E. (Oligopodia) epigonus*, descr., compared with *Catopygus recens*; DE MEIJERE (57) p. 141, pl. xix. +*E. goldfussi*; SIEMIRADZKI (255) p. 141. +*E. aff. olfersii*; ZLATARSKI (299). +*E. orbicularis*; LISSAJOUS (153) p. 176: STRANGWAYS (266) p. 23. +*E. peroni*; GLANGEAUD (101) p. 13. +*E. scutatus*; LISSAJOUS (153) p. 176: STRANGWAYS (266) p. 49, 54 & fig. +*E. terquemi*; LISSAJOUS (153) p. 175.

Echinocardium; DELAGE (54) p. 267, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1399. *E. sp. juv.*; LO BIANCO (154) p. 61, pl. xl. *E. australe*; BELL (22A): HALL (111) p. 73. *E. cordatum*; MAR. BIOL. ASS. (184) p. 211: NOBRE (198) & (199): NORDMANN (200). +*E. deikey*; SCHUETZE (251) p. 185. *E. flavescens*; BELL (22A): MAR. BIOL. ASS. (184) p. 211. +*E. orthonotum*; CLARK (39) p. 430, pl. cxix. *E. pennatifidum*; MAR. BIOL. ASS. (194) p. 211.

Echinocidaris vide *Arbacia*.

+*Echinococonus* (seu *Galerites* [melius *Conulus*]):—*E. conicus*; ROWE (235) p. 251: WRIGHT (294). *G. globulus*; HINDE (125). *E. roemeri*; GOURDON (102) p. 218. *G. vulgaris*; USSING (275) p. 86, fig.

+*Echinocorys* (seu *Ananchites*):—*A. gibba*; RABELLE (221). *A. ovata*; ARMASCHESKY (14): FUGGER (92) p. 339: KARAKASH (138) p. 26: TÖRNEBOHM (267) p. 132: USSING (275) p. 85, fig.: var. *pyramidata*; BERG (24). *E. pyramidatus*; ROWE (235) p. 256. *A. scutatus*; BURNET (33). *E. scutatus*, cum varr. *pyramidatus* et *striatus*; HINDE (125). *A. sulcata*; GRÖNWALL (109) p. 29, & (108) p. 429: TÖRNEBOHM (267) p. 143 & fig. *E. vulgaris*; DIBLEY (62): GOURDON (102) p. 218: ROWE (235) p. 239, 243, 247, 250, 255, 265, 293.

Echinocorytidæ discussed; DE MEIJERE (57) p. 152.

Echinocrepis; DELAGE (54) p. 267: diagnosis; MEISSNER in HAMANN (112) p. 1405. *E. cuneata*, actinal area (p. 124, 130), *E. setigera* descr. (p. 144, pls. lxvi-lxix also p. 124, 125, 127, 128, 130, 131); AGASSIZ (3).

Echinocyamus descr.; DELAGE (54) p. 254, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1380. *E. sp.*; HALL (111) p. 72. *E. crispus* descr. & compared with *E. pusillus* (p. 105, pls. vi, xvii), *E. protractus*, descr. (p. 109, pls. vi, xvii, xviii); DE MEIJERE (57). *E. pusillus*; MAR. BIOL. ASS. (184) p. 210: NOBRE (198) p. 55, & (199): +DOLLFUS (65) p. 662: +PATRINI (208) p. 741. +*E. pyriformis*; COUFFON (46) p. 43. *E. scaber* n. sp., Malay Archipelago, 120-1886 metres; DE MEIJERE (57) p. 108, pls. vi, xvii.

+*Echinocystidæ* defined; KLEM (142) p. 13.

+*Echinocystis* descr.; DELAGE (54) p. 217: syn. *Cystocidaris*, defined, *E. pomum*, incl. *E. uva*, descr.; KLEM (142) p. 13.

Echinodiscus Leske; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. auritus*; HERDMAN (120) p. 142: radioles, pedicellariae, &c.; DE MEIJERE (57) p. 138, pl. xix.

+*Echinodiscus* Worth. & Miller, vide iv, g.

Echinolampas; DELAGE (54) p. 264: diagnosis; FOURTAU (83) p. 427: MEISSNER in HAMANN (112) p. 1387: apical system; AGASSIZ (3) p. 173, pl. lxxv. *E. depressa*, details of test; op. cit. p. 118, pl. lxiv, lxxv:

radioles, pedicellariae, compared with *E. alexandri* & *E. blanchardi*; DE MEIJERE (57) p. 144, pl. xix. + *E. ellipsoidalis*; GOURDON (102) p. 221. + *E. hemisphaericus*; COUFFON (46) p. 42: DOUXAMI (69) p. 188, 561. + *E. hovelacquei*; GOURDON (102) p. 221. *E. oviformis*; FOURTAU (83) p. 428: HERDMAN (120) p. 142. + *E. scutiformis*; DOUXAMI (69) p. 188, 561: SCHUETZE (251) p. 185. + *E. subsimilis*; FUGGER (92) p. 345.

Echinolampinae; DELAGE (54) p. 264.

Echinometra descr.; DELAGE (54) p. 246: diagnosis; FOURTAU (83) p. 415: MEISSNER in HAMANN (112) p. 1377. *E. lucunter*; MARTENS (185) p. 131: G. of Suez & beaches; FOURTAU (83) p. 415. *E. mathaei* (= *lucunter* Leske), compared with *E. oblonga*; DE MEIJERE (57) p. 101. *E. oblonga*, probable new genus; DELAGE (54) p. 246: formerly confused by Mortensen with *E. mathaei*, now distinguished; MORTENSEN (195) p. 123, pl. v, vii. *E. subangularis*; BRANNER (32) p. 271.

Echinometridae, vide *Selenechinus*.

Echinometrinae defined with list of genera; DELAGE (54) p. 246.

Echinoneus descr.; DELAGE (54) p. 263: diagnosis; MEISSNER in HAMANN (112) p. 1385. *E. cyclostomus*; HERDMAN (120) p. 142: radioles &c.; DE MEIJERE (57) p. 139: a sand-feeder; GARDINER (95) p. 340. *E. minor*; MARTENS (185).

Echinoninae; DELAGE (54) p. 263.

Echinorodum vide *Clypeaster*.

Echinosoma; DELAGE (54) p. 223.

+ *Echinospatagus cordiformis*; STRANGWAYS (266) p. 72, 76.

Echinostrephus; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376. *E. molare*; HERDMAN (120) p. 139.

Echinothrix; DELAGE (54) p. 232. *E. calamaris*, incl. *E. desori*; DE MEIJERE (57) p. 51: fr. Redang, ambulacral radiole, pedicellariae; MORTENSEN (195) p. 30, pl. iii-v. *E. diadema*; HERDMAN (120) p. 139: MARTENS (185) p. 132: (= *turcarum*), radioles, pedicellariae; DE MEIJERE (57) p. 50, pl. xiv: pedicellariae, spicules; MORTENSEN (195) p. 31, pl. iii, iv.

+ *Echinothuria* sp.; SALTER (240).

Echinothurida defined (p. 216) descr. (p. 219) with Fam. *Echinothuriinae* (p. 221); DELAGE (54).

Echinothuridae maintained, relations discussed, derived from *Lepidocentridae*; MORTENSEN (195) p. 51.

Echinothuriinae defined with list of genera; DELAGE (54) p. 221.

Echinus descr.; DELAGE (54) p. 242, & figg.: diagnosis; FOURTAU (83) p. 416: MEISSNER in HAMANN (112) p. 1369. *E. acutus*; MAR. BIOL. ASS. (184) p. 210. *E. albocinctus* descr., distinguished from *E. magellanicus*, also in + *Pliocene*; LORIO (162) p. 18, pl. i. *E. angulosus*; BELL (22A). *E. armatus* vide *Selenechinus*. *E. elegans*; DE MEIJERE (57) p. 208. *E. esculentus*; DEKHUYZEN (51): GEMMILL & LINSTOW (99): MAR. BIOL. ASS. (184) p. 210: NOBRE (198) p. 55 & (199): section of radial cord figd.; ROY. COLL. SURGEONS (237) p. 4. *E. gilchristi* n. sp., 33-700 fm., S. African coast, various locc.; BELL (22A) p. 170. + *E. lineatus*; WALTHER (281) p. 158. *E. magellanicus*, descr., is not *Sterechinus*, distinguished from *E. margaritaceus*; LORIO (162) p. 13, pl. i. *E. microtuberculatus*; HERBST (117 & 119): development; SCHMIDT (246): vide etiam sub *Parechinus*. *E. miliaris*; HERBST (117): JANNSENS (136): MAR. BIOL. ASS. (184) p. 210: RETZIUS (226) p. 28: ZIEGLER (298): vide etiam sub *Parechinus*. + *E. molinis* [*monilis*]; COUFFON (46) p. 41. *E. neglectus*; RETZIUS (226) p. 28. *E. norvegicus* not bipolar; MEISSNER (186) p. 27. *E. saxatilis*; PARONA (207) p. 384. *E. trizonalis* is a *Psammechinus*; MORTENSEN (195) p. 120. *E. verrucu-*

latus, distinct from *E. angulosus*, G. of Suez and †beaches; FOURTAU (83) p. 416.

Echinusinae defined with lists of genera; DELAGE (54) p. 242.

†*Enallaster*:—*E. boehmi* **n. sp.** Lower Cretaceous, Honduras, also in Texas (p. 49, pl. iv), *E. sapperi* **n. sp.** *ibid.* (p. 47, pl. iv), *E. texanus*, descr., *ibid.* (p. 52, pl. iv); LORIOL (162).

Encope; DELAGE (54) p. 255, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. emarginata*; LORIOL (162) p. 21.

Eobrissus **n. g.** of Prynmodesmid Spatangoids, genotype *E. townsendi* **n. sp.**, coast of Oman; BELL (22).

†*Eocidaris* defined; KLEM (142) p. 67. *E.?* sp.; KITTL (141) p. 685, pl. xxii. *E.* sp. Julien 1874 (p. 72); *E. blairi* descr. (p. 67); *E. drydenensis* (p. 71); *E. forbesianus* (p. 67), *E. hallianus*, *E. keyserlingi* (p. 68), *E. laevispinus*, *E. muensterianus* (p. 69), all descr.; *E. scrobiculata* (p. 71); *E. verneuillianus* descr. (p. 70): KLEM (142).

†*Eotiaris*; KLEM (142) p. 74.

†*Epiaster*:—*E. cuevasensis* **n. sp.**, Lower Cretaceous, Honduras; LORIOL (162) p. 54, pl. iv. *E. distinctus*; COLLET (44) p. 44. *E. elegans*; RICHARDSON (227) p. 48. *E. gibbus*; GOURDON (102) p. 223. *E. cf. incisus*; SAVORNIN (241) p. 141. *E. renoti*; COLLET (44) p. 80.

Eupatagus (seu *Euspatagus*, seu *Euspatangus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1397. *E. formosus*; DAINELLI (49) p. 197 & (50). *E. ornatus* GOURDON (102) p. 223. *E. valenciennesii*; HALL (111) p. 73.

Faorina; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1391. *F. chinensis*; DE MEIJERE (57) p. 183.

Fibularia; DELAGE (54) p. 254: diagnosis; MEISSNER in HAMANN (112) p. 1380. *F. australis?*, 12–15 petal-pores; HERDMAN (120) p. 141. *F. cribrellum*, descr.; DE MEIJERE (57) p. 112, pls. vi, xviii. †*F. ovata* (Münst. sub *Echinoneus*), descr.; SCHUETZE (251) p. 178, pl. ii. †*F. oviformis*; BELLINI (23) p. 8. *F. ovulum*, radioles and pedicellariae; DE MEIJERE (57) p. 111, pl. xviii. †*F. tarentina*; BELLINI (23) p. 5, 8. †*F. ursendorffensis* (K. Miller, sub *Echinocyranus* [sic]) descr.; SCHUETZE (251) p. 176, pl. ii. *F. volva*; DE MEIJERE (57) p. 111: †FOURTAU (83) p. 444.

Fibulinae defined with list of genera; DELAGE (54) p. 254.

Galerites, vide *Echinoconus*.

†*Galeropygus*:—*G. marcoui*, *G. nodoti*, *G. sulcatus*; LISSAJOUS (153) p. 174.

†*Gauthieria*, apical system; AGASSIZ (3) p. 40.

Genicopatagus (v. etiam sub *Argopatagus*); DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (112) p. 1389. *G. affinis*; AGASSIZ (3) p. 172, 183, pl. xci.

Genocidaris descr.; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *G.* sp. (p. 202), *G. decipiens* **n. sp.**, Flores Sea, 40 m. (p. 76, pl. xvi), *G. monolini*, descr. (p. 74, pls. iv, xvi); DE MEIJERE (57).

Glyphocyphinae Duncan, discussed; DELAGE (54) p. 240.

†*Glyphocyphus*; MORTENSEN (195) p. 112.

†*Glyphosoma* [err. pro *Cyphosoma*] *radiatum*; COLLET (44) p. 76.

†*Glypticus hieroglyphicus*, incl. *G. magniflora* Étallon; LISSAJOUS (153) p. 169.

Glyptocidaris; DELAGE (54) p. 238. *G. crenularis* referred to *Phymosomatidae*; MORTENSEN (195) p. 47.

Goniocidaris; DELAGE (54) p. 227, fig. *G. canaliculata*, juv., anal system (f. 15) generic position discussed, includes *G. nutrix* (p. 4); AGASSIZ (3): vide etiam *Centrocidaris*. *G. doederleini*, ditto. *G. tubaria*; DE MEIJERE (57) p. 204: Victoria, probably incl. *G. geranioides*; HALL (111) p. 70.

- Goniopneustes*; DELAGE (54) p. 241: maintained; MORTENSEN (195) p. 102.
- Gymnechinus*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1371. *G. darnleyensis*, differences from type, pedicellariae; DE MEIJERE (57) p. 89, pl. xvii, but see p. 203: apical system, auriculae (p. 117), De Meijere's specimens are not this sp. (p. 116), *G. inconspicuus* n. sp. Funafuti (p. 118, pl. vi, vii); MORTENSEN (195). *G. pulchellus* n. sp., G. of Siam, 1-15 fm.; op. cit. p. 113, pl. i, ii, vii: DE MEIJERE (57) p. 203. *G. pumilio* n. sp. Malay Archipelago, 22-45 m.; op. cit. p. 90, pl. xvii, but = *Salmacis rufa* Bell, p. 203: is *Psammechinus*; MORTENSEN (195) p. 117. *G. versicolor* n. sp., Macclesfield Bank, = "*Temnopleurus reynaudi*" Bell; op. cit. p. 116, pl. vii.
- Gymnopatagus*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1397.
- Hapalosoma* (vide etiam *Hoplosoma*); DELAGE (54) p. 223, fig.: relations to *Asthenosoma*; MORTENSEN (194) p. 85. *H. pellucidum*, pedicellariae; DE MEIJERE (57) p. 37, pl. xiii.
- +*Hecistocyphus*; DELAGE (54) p. 233.
- Helicoidaris*, descr.; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376.
- Hemiaster*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1390: discussed with *H. bufo* as genotype, with *Trachyaster* as subgenus (genotype *T. globulus*), its distinction from *Linthia* based on heteronomy of IR 1; BATHER (18) p. 297. +*H. affinis* distinguished (p. 22), +*H. angustipneustes*, incl. *H. stella* d'Orb. (p. 30); LAMBERT (147). +*H. bufo*; COLLET (44) p. 44. *H. cavernosus*; LUDWIG (164) p. 692. +*H. cubicus*; FOURTAU (82) p. 233: distinguished from *Linthia oblonga*; NEWTON (196). +*H. depressus*; JAHN (134) p. 81. *H. gallegosensis* n. sp. R. Gallegos, Patagonia, and young; LORIOLO (162) p. 5, pl. i. +*H. gauthieri*; ROUSSEL (232) p. 15, & (233) pp. 28, 36. *H. gibbosus*; DE MEIJERE (57) p. 182. +*H. ligeriensis* distinguished; LAMBERT (147) p. 29. +*H. minimus*; ROWE (235) p. 241, 294. +*H. cf. minimus*; SCHARDT (244) p. 155. +*H. nasutulus* descr., is *Peroniaster*; LAMBERT (147) p. 22, 23. +*H. pellati*; GOURDON (102) p. 223. +*H. pisum* (p. 25), +*H. prunella* distinguished (p. 21, 30), +*H. punctatus* distinguished, horizon (p. 26), +*H. cf. punctatus*, Garumnian (p. 28), +*H. pusillus* young of *H. nasutulus* (p. 22), +*H. stella* Morton is *Bolbaster* (p. 31); LAMBERT (147). +*H. sudanensis* n. sp. Eocene, Garadimi and Tamaské in Sokoto; BATHER (18) p. 299, pl. xi: probably *Linthia*; LAMBERT in Review. +*H. suevicus*; SCHUETZE (251) p. 180. +*H. tamulicus*; LAMBERT (147) p. 29. +*H. vancouverensis* n. sp. Nanaimo group, Upper Cretaceous, Cowichan R. and Shopland, Vancouver Id., cotypes internal casts in Mus. Geol. Surv. Ottawa; WHITEAVES (285) p. 289. +*H. verneuilli*; ROUSSEL (233) p. 36. +*H. verticalis*; FUGGER (92) p. 345.
- +*Hemicidaris*, descr.; DELAGE (54) p. 234. *H. crenularis*; MAIRE (178). *H. intermedia*; op. cit.: ROLLIER (230) p. 466: STRANGWAYS (266) p. 59. *H. purbeckensis*; GLANGEAUD (101) p. 33. *H. undulata*; MAIRE (178). *H. zignoi*; DEL CAMPANA (55) p. 267.
- Hemicidarisiinae* defined with list of genera; DELAGE (54) p. 234.
- Hemipatagus mascareignarum* discussed; DE MEIJERE (57) p. 191.
- Hemipodina*, systematic position; DE MEIJERE (57) p. 67. +*H. chalmasi*, +*H. granulata*? juv., +*H. icaunensis*; LISSAJOUS (153) p. 166. *H. indica*, descr., esp. radioles & pedicellariae; DE MEIJERE (57) p. 65, pls. iii, xv, xvi. +*H. lorioli* n. sp., Bathonian, Davayé; LISSAJOUS (153) p. 167, pl. ii. +*H. woodwardi*; STRANGWAYS (266) p. 23.
- +*Hessotiara minor* n. sp., Hettangian of Vendée; LAMBERT (148) p. 542, pl. xviii.

- Heteraster* compared with *Enallaster*; LORIEL (162) p. 48. +*H. oblongus*; SCHARDT (244) p. 136.
- Heterocentrotus*; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1377: ditto, incl. *Acrocladia*; FOURTAU (83) p. 413. *H. mamillatus*; COUTIÈRE (48): DE MEIJERE (57) p. 102: MARTENS (185) p. 132: entrance to G. of Suez and raised beaches, but not at Port Said as cited by Gauthier; FOURTAU (83) p. 414. *H. trigonarius*; DE MEIJERE (57) p. 102.
- +*Heterolampas maresi*; SAVORNIN (241) p. 150.
- +*Heterosalenia* discussed; DELAGE (54) p. 234.
- Histocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 228: rejected; AGASSIZ (3) p. 24.
- +*Holaster*; DELAGE (54) p. 265, fig. *H. carinatus*; RADKEVICH (222): WOLLEMAN (290). *H. faxensis*; TÖRNEBOHM (267) p. 143. *H. laevis*; STRANGWAYS (266) p. 80: WOLLEMAN (290). *H. nodulosus*; COLLET (44) pp. 44, 47, 70. *H. placenta*; BURNET (33): JAHN (134) pp. 83, 84, 86, 89: ROWE (235) p. 248, 294: distinguished from *H. planus*; JUKES-BROWNE (137) p. 458. *H. planus*; BURNET (33): PETRASCHECK (216): ROWE (235) p. 241, 243, 293: distinguished from *H. laevis*; JUKES-BROWNE (137) p. 457. *H. rotundus*; STRANGWAYS (266) p. 80. *H. scanensis*; TÖRNEBOHM (267) p. 132. *H. subglobosus*; STRANGWAYS (266) p. 80: WOLLEMAN (290): Lambert quoted; COLLET (44) pp. 70, 74. *H. suborbicularis* (p. 78), *H. trecensis*? (p. 80); STRANGWAYS (266).
- Holasterinae* defined with list of genera in Subfam. *Ananchytinae* & *Collyritinae*; DELAGE (54) p. 265.
- +*Holocopneustes gourdoni*; GOURDON (102) p. 220.
- Holcypida* defined with Fam. *Holcyp-*, & *Conocypinae*; DELAGE (54) p. 248.
- Holcypinae* defined with list of genera; DELAGE (54) p. 248.
- +*Holcypus* descr.; DELAGE (54) p. 248, fig. *H. corallinus*; LISSAJOUS (153) p. 172. *H. depressus*; CLERC (42) p. 96: STRANGWAYS (266) p. 23: var.; LISSAJOUS (153) p. 172, pl. ii. *H. hemisphaericus*; op. cit. p. 171: incl. *H. devauxianus*, resemblance to *H. depressus* in young; CLERC (42) p. 97. *H. oblongus*; STRANGWAYS (266) p. 40. *H. planatus*; UDDEN (273) p. 37. *H. scutatus*; STRANGWAYS (266) p. 40. *H. texanus*; RICHARDSON (227) p. 48.
- Holopneustes*; DELAGE (54) p. 241. *H. inflatus*, holotype examined; MORTENSEN (195) p. 107. *H. porosissimus*; HALL (111) p. 72: measurements; MORTENSEN (195) p. 107. *H. purpurascens*, holotype descr.; op. cit. p. 106, pl. ii, vii.
- Homolampas* (v. etiam sub *Argopatagus*); DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1401. *H. fragilis*, *H. fulva* (p. 175, figg.), *H. gracilis* (p. 176), *H. hastata* descr. (p. 175, pls. lv, lxiii, lxiv); AGASSIZ (3). *H. rostrata* descr.; DE MEIJERE (57) p. 196, pl. xxiii.
- Hoplosoma* [err. pro *Hapalosoma*], rejected; AGASSIZ (3) p. 85.
- +*Hybocypus* (seu -eus):—*H. sp.*; SIEMIRADZKI (255) p. 141. *H. gibberulus*, difference between Callovian & Bathonian forms; *H. ovalis*: LISSAJOUS (153) p. 173.
- Hygrosoma*; DELAGE (54) p. 223: rejected; AGASSIZ (3) p. 85. *H. hoplacantha*, radioles, pedicellariae, spicules, also young specimens; DE MEIJERE (57) p. 37, pl. xiii.
- +*Hypodiadema balsami* Stopp., probably *Acrosalenia*; LAMBERT (148) p. 540.
- Hypsiechinus* descr.; DELAGE (54) p. 239, figg. *H. coronatus*; LUDWIG (165).
- +*Iheringiana*; DELAGE (54) p. 255.
- +*Infulaster*:—*I. excentricus*; BURNET (33): FUGGER (92) p. 339: ROWE

(235) p. 251. *I. rostratus*, enlarged range; op. cit. p. 248, 249, 256, 266, 294.

Irregulariæ [sic] defined (p. 215) descr. (p. 247) with Orders *Holcotyp*-, *Clypeastr*-, & *Spatang-ida* (p. 248); DELAGE (54).

Kamptosoma; DELAGE (54) p. 224. *K. indistinctum* n. sp., Challenger Station 272 = *Phormosoma tenue*? of Chall. Rep., descr.; AGASSIZ (3) p. 110, pl. 1.

+*Koninckocidaris*; KLEM (142) p. 74.

Lagana decagona Blainv. = *Laganum decagonale*; DE MEIJERE (57) p. 117.

Laganum; DELAGE (54) p. 254, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1381: various specific characters discussed; DE MEIJERE (57) p. 113. *L. anale* n. sp., Moluccas, 90–141 m.: op. cit. p. 129, pls. vi, xviii. *L. bonani*; FOURTAU (83) p. 423: MARTENS (185): radioles, &c.; DE MEIJERE (57) p. 114, pl. xviii. *L. conicum* n. sp., near Macassar, 450 m. (p. 120, pls. vi, xviii), *L. (Peronella) decagonale*, descr. (p. 117, pls. vi, xviii); DE MEIJERE (57). *L. decagonum*; MARTENS (185). *L. depressum*; HERDMAN (120) p. 141: radioles, position of gonopores; DE MEIJERE (57) p. 114, pls. vi, xviii: †var. *sinaiticum*; FOURTAU (83) p. 444. *L. fragile*, *L. fudsiyama* (p. 130) *L. lesueurii* distinguished from *L. decagonale* and descr., also young, incl. *L. elongatus*, *L. rostratum*, & *Peronella rubra* (p. 122, pls. vi, xviii), *L. minutum* n. sp., Sulu Archipelago, 13–23 m. (p. 125, pls. vi, xviii); DE MEIJERE (57). *L. orbiculare*; MARTENS (185): distinguished from *L. decagonale* and descr., also young, perhaps incl. *Peronella ludwigi* Pfeffer; DE MEIJERE (57) p. 116, 126, pls. vi, xviii. *L. (Peronella) peronii* & *L. putnami* discussed (p. 116), *L. solidum* n. sp., Sulu Sea & Timor, 73–350 m. (p. 121, pl. vi); op. cit.

+*Lambertia*; AGASSIZ (3) p. 200.

Leiocidaris pistillaris vide sub *Cidaris baculosa*.

+*Leiopodina tallavignesi*; DAINELLI (50): descr., incl. *Chrysomelon pictum*; DAINELLI (49) p. 193.

+*Leiosoma*:—*L. bahezrei*, *L. gourdoni*; GOURDON (102) p. 223.

Leodia, vide sub *Cassidulus*.

+*Lepidechinus* defined; KLEM (142) p. 20. *L. imbricatus* descr.; op. cit. p. 21: interambulacra; AGASSIZ (3) p. 79, 80. *L. rarispinus* descr.; KLEM (142) p. 21.

+*Lepidesthes* defined, syn. *Hybochinus*, *L. colletti* descr. (p. 24), *L. coreyi* descr. (p. 25), *L. devonians* (p. 26), *L. formosus* descr. (p. 25), *L. laevis* (p. 27), *L. spectabilis* descr. (p. 26), *L. wortheni* descr. (p. 28); KLEM (142).

+*Lepidesthesinae* defined with list of genera; DELAGE (54) p. 218.

+*Lepidesthidae*; KLEM (142) p. 22.

+*Lepidocentridae* defined; KLEM (142) p. 16.

+*Lepidocentrus*; DELAGE (54) p. 218: defined, *L. eifelianus* descr. (p. 16), *L. muelleri* & *L. rhenanus* descr. (p. 17); KLEM (142).

+*Lepidocentrusinae* defined with list of genera; DELAGE (54) p. 218.

+*Lepidocidaris* defined & *L. squamosus* descr.; KLEM (142) p. 72.

+*Leptechinus* & *L. gracilis*; KLEM (142) p. 74.

Linopneustes; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1398: discussed; AGASSIZ (3) p. 178. *L. excentricus*; op. cit. p. 183: descr.; DE MEIJERE (57) p. 180, 240, pls. x, xxii. *L. longispinus* (p. 178–185, 204, & figg., pl. xciii, xciv), *L. murrayi* (p. 178, 183); AGASSIZ (3).

Linthia (v. etiam sub *Hemiaster*); DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1391: distinguished from *Schizaster* & *Periaster*; TORNQUIST (268) p. 392. †*L. aragonensis* & †*L. arizensis*; GOURDON (102) p. 219. *L. australis*; HALL (111) p. 73. †*L. bisulca*,

- +*L. cotteaui*, +*L. dubia*, & +*L. ducrocqui* distinguished from *Hemiaster sudanensis*; BATHER (18) pp. 302, 303. +*L. heberti* (p. 218), +*L. hovelacquei* (p. 219); GOURDON (102). +*L. irregularis*; FUGGER (92) p. 339. +*L. oblonga*, Cenomanian, Sinai, descr. and figd., distinguished from *Hemiaster cubicus*; NEWTON (196). +*L. orbigny*, +*L. poblae*; GOURDON (102) p. 219. +*L. pomeli*, +*L. sindensis*; BATHER (18) p. 302.
- Lissodiadema*; DELAGE (54) p. 232.
- Lobophora bifissa*; MARTENS (185). *L. truncata* vide *Tretodiscus bisperforatus*.
- Lovenia*; DELAGE (54) p. 268: diagnosis; FOURTAU (83) p. 428: MEISSNER in HAMANN (112) p. 1400. *L. elongata*; BELL (22A): DE MEIJERE (57) p. 193: HERDMAN (120) p. 142: measurements, incl. *Spatangus crux Andreae* Audouin non Lam.; FOURTAU (83) p. 429. *L. gregalis*, tubercles, young (p. 194, pl. x), *L. subcarinata* (p. 194); DE MEIJERE (57).
- Loxechinus* diagnosis; MEISSNER in HAMANN (112) p. 1369. *L. albus*; DE MEIJERE (57) p. 208, 230.
- +*Lysechinus*; DELAGE (54) p. 219: origin of interambulacral; AGASSIZ (3) p. 82.
- +*Macropneustes* diagnosis; MEISSNER in HAMANN (112) p. 1397. *M. brissoides*; DAINELLI (49) p. 195 & (50). *M. decipiens*; BASEDOW (16). *M. pulvinatus*; FUGGER (92) p. 345. *M. trutati*; GOURDON (102) p. 218.
- +*Magnosia*:—*M. decorata* (p. 169), *M. forbesi* (p. 168); LISSAJOUS (153).
- Maretia*; DELAGE (54) p. 268, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1396. *M. alta*; DE MEIJERE (57) p. 192: HERDMAN (120) p. 142. +*M. aragonensis*; GOURDON (102) p. 218. *M. planulata*; HERDMAN (120) p. 142: variation in fascioles; DE MEIJERE (57) p. 190, pl. xxiii. +*M. zeisei* incl. some specimens referred by GAGEL to *Spatangus gottschei*; LAMBERT in Review of GAGEL.
- Melebobis* Girard, rejected; MORTENSEN (195) p. 75.
- Mellita* descr.; DELAGE (54) p. 255, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1384. *M. pentapora*, descr., range, young; CLARK (38) p. 565, pl. x.
- Mellitella* diagnosis; MEISSNER in HAMANN (112) p. 1384.
- +*Melonites*; DELAGE (54) p. 219, fig.: defined, synn. *Melonechinus*, *Mel-echinus*; KLEM (142) p. 40: interambulacral; AGASSIZ (3) p. 80. *M. sp.* Julien, 1874, & Tornquist, 1897 (p. 44), *M. crassus* & *M. dispar* descr. (p. 41), *M. etheridgii* (p. 44), *M. irregularis* descr. (p. 41), *M. multiporus* (incl. *M. indianensis*, *M. giganteus*, & *Oligoporus sulcatus*) descr. (p. 42, pls. i-vi), *M. septenarius* descr. (p. 43); KLEM (142).
- +*Melonitesinae* defined with list of genera; DELAGE (54) p. 219.
- +*Melonitidae* defined syn. *Palaeochinidae*, *Melonechinidae*; KLEM (142) p. 27.
- Meoma*; DELAGE (54) p. 270, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1394.
- Mespilia*; DELAGE (54) p. 241. *M. globulus*, DE MEIJERE (57) p. 87: pedicellariae, &c.; MORTENSEN (195) p. 96, pl. vi, vii. *M. levituberculata* (p. 98), *M. whitmaei* syn. of *M. globulus* (p. 97); MORTENSEN (195).
- Metalia*; DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1394: diagnosis, incl. *Prometalia* & *Plagiobrissus*; FOURTAU (83) p. 430; *M. maculosa*, G. of Suez & beaches, measurements, growth-changes; op. cit. p. 431. *M. spatagus* (= *maculosa*); DE MEIJERE (57) p. 184. *M. sternalis*, young, compared with *M. robillardi* & *Xanthobrissus garetti*; op. cit. p. 185, pls. xxii, xxiii: & ? **var. nov. minor**, G. of Suez; FOURTAU (83) p. 432.

†*Metamorphinus convexus*; DEL CAMPANA (55) p. 267.

†*Micraster*; DELAGE (54) p. 268, fig. *M. spp.*; ROWE (235) p. 266. *M. antiquus*; ROUSSEL (234) p. 37. *M. breviporus*; COLLET (44) p. 80: FLEGEL (79). *M. brevis*; GOURDON (102) p. 217: ROUSSEL (232) p. 13, 18. *M. cf. brevis*; ROUSSEL (233) p. 29, 33. *M. coranguinum*; COLLET (44) p. 80: FUGGER (92) p. 339: HINDE (125): ROWE (235) p. 250, 251, 293: diagnosis; JUKES-BROWNE (137) p. 27. *M. corbovis*, diagnosis; op. cit. p. 22. *M. cor-columbarium*; GOURDON (102) p. 217. *M. cortestudinarium*; BURNET (33): COLLET (44) p. 80: JAHN (134) p. 81: diagnosis; JUKES-BROWNE (137) p. 26. *M. de lorioli*; JAHN (134) pp. 81, 83, 89. *M. gibbus* (?); FUGGER (92) p. 339. *M. gourdoni*; GOURDON (102) p. 217. *M. heberti*; ROUSSEL (233) p. 29, 33. *M. incan-nensis* [sic]; COLLET (44) p. 80. *M. leskei*; BURNET (33): diagnosis; JUKES-BROWNE (137) p. 24. *M. praecursor*; ROWE (235) p. 245, 294: diagnosis; JUKES-BROWNE (137) p. 24. *M. senonensis*; COLLET (44) p. 80. *M. testudinarum* [sic]; FUGGER (92) p. 339.

Microcyphus; DELAGE (54) p. 241: distinguished from *Amblypneustes*; MORTENSEN (195) p. 101. *M. annulatus* n. sp., Bass Str. 40 fm. (p. 100, pl. v, vi), *M. elegans* n. sp., Port Philip, = "*M. zigzag*" Bell 1888 (p. 99, pl. vi, vii), *M. maculatus*, pedicellariae, radioles (p. 98, pl. ii, vi, vii) & var. (p. 99), *M. rousseaui* (p. 98); MORTENSEN (195). *M. zigzag*; HALL (111) p. 71: pedicellariae, radioles, &c., incl. specimens named *Amblypneustes ovum*; MORTENSEN (195) p. 9, pl. ii.

†*Micropsis*:—*M. frossardi*; GOURDON (102) p. 223. *M. stachei*; DAINELLI (50): cf. *M. veronensis*; DAINELLI (49) p. 192.

Micropyga discussed; DELAGE (54) p. 232: spicules distinct fr. *Astropyga* (p. 19), pedicellariae (p. 32, pl. iv, v); MORTENSEN (195). *M. tuberculata*, radioles, podia & spicules, pedicellariae (p. 59, pls. xiv, xv), *M. violacea*, descr. (p. 63, pls. iv, xv); DE MEIJERE (57).

Micropygidae n. fam. for *Micropyga*; MORTENSEN (195) p. 45.

Micropyginae [=preceding] defined; DELAGE (54) p. 232.

Moirá; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1392: diagnosis, its claim to the name *Schizaster* rejected, the genotype of the latter thus becoming †*S. studeri*; FOURTAU (83) p. 440. *M. sp.*, radioles, spicules; DE MEIJERE (57) p. 183: this specimen is perhaps young of *M. stygia*; AGASSIZ (3) p. 216. *M. clotho* details of test, compared with *M. atropos*; op. cit. p. 214, pl. cix. *M. stygia*, descr.; FOURTAU (83) p. 441, pl. i.

Moiropsis diagnosis; MEISSNER in HAMANN (112) p. 1393.

Moulinia diagnosis; op. cit. p. 1385: perh. young *Encope*; DELAGE (54) p. 255.

†*Myriastiches* & *M. gigas*; KLEM (142) p. 74.

Nacospatangus; AGASSIZ (3) p. 200: diagnosis; MEISSNER in HAMANN (112) p. 1398. *N. gracilis* additional details of test; AGASSIZ (3) p. 202, pl. xcvi.

Neolampas diagnosis; MEISSNER in HAMANN (112) p. 1387: apical system; AGASSIZ (3) p. 173, pl. lxiv. *N. rostellata*, details of test; op. cit. p. 119–121, pl. lxiv. *N. tenera*, descr.; DE MEIJERE (57) p. 146, pl. vi, xix.

Neopneustes diagnosis; MEISSNER in HAMANN (112) p. 1399.

†*Noetlingia* sp.; BOULE (30).

Nucleolites (vide etiam *Echinobrissus*); DELAGE (54) p. 264: diagnosis; MEISSNER in HAMANN (112) p. 1385. †*N. bohemicus*; ZAHÁLKA (296) p. 18, 149.

Nucleolitinae; DELAGE (54) p. 263.

†*Offaster*, vide sub *Cardiaster*.

Oligopodia diagnosis; MEISSNER in HAMANN (112) p. 1386.

†*Oligoporus* defined (p. 37), *O. coreyi* descr. (p. 38), *O. danae* descr. (p. 37),

O. minutus (p. 40); KLEM (142). *O. missouriensis* descr.; KLEM (142) p. 38: interambulacra; AGASSIZ (3) p. 79, 80. *O. mutatus*, *O. nobilis* (p. 39), *O. parvus* (p. 40), all descr.; KLEM (142). *O. soreili* n. sp. Visean, Belgium; FRAIPONT (85) p. 10, pls. iii, iv, v.

Opechinus; DELAGE (54) p. 240: maintained for *Pleurechinus variabilis* Doed. & *O. rousseaui*, *hookeri*, *costatus*, *tuberculosus*, *valenciennesi*, *percutus*, *affinis*, all Tertiary, India; MORTENSEN (195) p. 92. *O. spectabilis* n. sp., Kei Is., New Guinea, 129 fm., is the *Temnopleurus hardwicki* of Challenger Rep. p. 107 (p. 94, pl. i, v-vii), *O. variabilis*, pedicellariae, spicules, &c. (p. 94, pl. vi, vii); MORTENSEN (195).

+*Oppenheimia*; DELAGE (54) p. 268.

+*Oriolampas* (v. etiam sub *Plesiolampas*):—*O. lorioli*; GOURDON (102) p. 221.

Orthopsidae Greg., criticised; MORTENSEN (195) p. 44.

+*Orthopsis miliaris*; ROUSSEL (232) p. 15 & (233) pp. 28, 36.

+*Palaechinus* defined, syn. *Typhlechinus* (p. 31), *P.* sp. Julien, 1874, & *P.* sp. Mitchell, 1897 (p. 36), *P.* sp. Tornquist 1897 (p. 37), *P. ellipticus* descr. (p. 31), *P. gigas* descr. (p. 32); KLEM (142). *P. globosus*; PEACH (209) p. 842. *P. intermedius* descr., *P. konincki* [i.e. *koenigi* McCoy, confused with *konincki* Julien], descr.; KLEM (142) p. 33. *P. konincki* (p. 9, pl. iii), *P. lacazei* (p. 9, pls. i, ii); FRAIPONT (85): descr.; KLEM (142) p. 34. *P. paradoxus*, *P. phillipsiae* (p. 35), *P. robineti*, *P. rutoti* (p. 36), *P. sphericus*, descr. (p. 34); KLEM (142).

+*Palechinida* defined with Suborders *Bothriocidaridae*, *Cystocidaridae*, & *Perischoechinidae*; DELAGE (54) p. 216.

+*Palaeëchinoida* as Sub-class, principles of classification, divided into Orders, A. *Cystocidaroida* with Famm. *Palaeodiscidae* & *Echinocystidae*, B. *Bothriocidaroida* with Fam. *Bothriocidaridae*, C. *Perischoëchinoida* with Famm. *Lepidocentr-*, *Lepidesth-*, *Melonit-*, & *Archaeocidaridae*; KLEM (142).

Palaeobrissus (seu *-bryssus*) (vide etiam sub *Argopatagus*); DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (112) p. 1390: ambulacra & apical system; AGASSIZ (3) p. 174.

+*Palaeodiscidae* defined; KLEM (142) p. 12.

+*Palaeodiscus* descr.; DELAGE (54) p. 218: defined, & *P. ferox*, descr.; KLEM (142) p. 12: anatomy; SPENCER (264).

Palaeolampas crassa; BELL (22A).

+*Palaeopedina*? sp.; LAMBERT (148) p. 543, pl. xviii.

Palaeopneustes descr.; DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (p. 112) p. 1389: discussed; DE MEIJERE (57) p. 240 & AGASSIZ (3) p. 178. *P. cristatus*; op. cit. p. 178, 180, 183, & figg., pl. xcv, xcvi. *P. fragilis*; op. cit. p. 183: descr.; DE MEIJERE (57) p. 175, 240, pls. ix, xxi, xxii. *P. hemingi* (p. 182), *P. hystrix* details of test, is not to be separated as *Archaeopneustes* (p. 179–186, & figg., pl. xcvi); AGASSIZ (3). *P. spectabilis*; op. cit. p. 180, 183: descr.; DE MEIJERE (57) p. 172, 240, pls. viii, xxi.

Paleopneustidae, as sub-fam. [of *Spatangidae*] incl. *Paleopneustes*, *Lino-pneustes*, *Homolampas*, *Phrissocystis*, *Argopatagus*, *Genicopatagus*, *Palaeotropus*, & *Palaeobrissus* (p. 131), as fam. of “Ananchytid Spatangoids” (p. 150); AGASSIZ (3).

Palaeostoma descr.; DELAGE (54) p. 272: diagnosis; MEISSNER in HAMANN (112) p. 1402. *P. mirabile*; DE MEIJERE (57) p. 172.

Palaeotropus (v. etiam sub *Argopatagus*); DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1401. *P. hironellei* distinctive characters (p. 170), *P. josephinae* (p. 171, figg.); AGASSIZ (3). *P. loveni*; DE MEIJERE (57) p. 200: redescri.; AGASSIZ (3) p. 168, pl. lxxxvii.

Parabrissus; AGASSIZ (3) p. 200.

- Paracentrotus* descr. ; DELAGE (54) p. 243, fig. : diagnosis ; MEISSNER in HAMANN (112) p. 1370. *P. lividus* ; DELAGE (54) p. 243.
- Parasalenia* descr. ; DELAGE (54) p. 245 : diagnosis ; MEISSNER in HAMANN (112) p. 1375. *P. gratiosa*, compared with *P. pöhlii*, pedicellariae ; DE MEIJERE (57) p. 97, pl. xvii : pedicellariae, incl. *P. pöhlii*, young, specimen recorded from Zanzibar, Bell 1903, is *Stomopneustes variolaris* ; MORTENSEN (195) p. 121, pl. v.
- Parasaleniniinae* ; DELAGE (54) p. 245.
- Paraster* discussed ; FOURTAU (83) p. 435.
- Parechininae* ; DELAGE (54) p. 242.
- Parechinus* descr. ; loc. cit., figg. : diagnosis ; MEISSNER in HAMANN (112) p. 1368. *P. microtuberculatus*, *P. miliaris* ; DELAGE (54) p. 242.
- +*Pedina* ; DELAGE (54) p. 233. *P. arenata* (p. 170), *P. gigas* (p. 169) ; LISSAJOUS (153). *P. lithographica* ; WALTHER (281) p. 167. *P. sublaevis* ; MAIRE (178) : LISSAJOUS (153) p. 169 : not typical form ; LAMBERT in Review.
- Pedinidae* should include *Pedina*, *Caeno-*, *Pseudo-*, *Micro-*, *Leio-*, *Echino-*, *Hemi-*, *Phymo-*, & *Palaeo-pedina*, *Mesodiadema*, *Echinopsis*, *Diademopsis*, *Hecistocyphus*, *Orthopsis*, *Miorthopsis*, *Gymnodiadema* ; MORTENSEN (195) p. 46.
- Pedininae* defined with list of genera ; DELAGE (54) p. 233.
- +*Pedinothuria* ; DELAGE (54) p. 235 : referred to *Pseudodiadematidae* ; MORTENSEN (195) p. 52.
- +*Pelanechinus* descr. ; DELAGE (54) p. 224.
- +*Peltastes* :—*P. clathratus* ; COLLET (44) p. 77. *P. stellulatus* ; STRANGWAYS (266). *P. aff. stellulatus* ; ŻLATARSKI (299). *Peltaster* [sic] *umbrella* ; FORTIN (81).
- Periaster* ; DELAGE (54) p. 271 : distinguished ; TORNQUIST (268) p. 392. *P. limicola* not this genus ; loc. cit. : of Challenger Rep. pl. xxxvb, f. 1–4 is not this sp. ; AGASSIZ (3) p. 210. +*P. oblongus* vide sub *Linthia*. *P. tenuis* descr., compared with *P. limicola* & *Hemiaster bufo* ; AGASSIZ (3) p. 209, pls. ciii–cv.
- Peripatagus*,—*Perypatagus* [sic] ; DELAGE (54) p. 271 : diagnosis ; MEISSNER in HAMANN (112) p. 1391.
- +*Perischodomus* defined, synn. *Perischodicaris*, *Homotoechus*, *Tretechinus* (p. 18), *P. biserialis* descr. (p. 18), *P. hartei* descr. (p. 19), *P. illinoiensis* descr., *P. magnus* (p. 20) ; KLEM (142).
- +*Perischoechinidae* defined as Suborder with Famm. *Lepidocentrus*, *Lepidesthes*, *Archaeocidaris*, *Melonites*, & *Tiarechinus*-inae ; DELAGE (54) p. 217, 218.
- +*Perischoechinoida* defined ; KLEM (142) p. 15.
- +*Permocidaris* ; KLEM (142) p. 74.
- Peronella* discussed, merged in *Laganum* (q. v.), *P. pellucida* ; DE MEIJERE (57) p. 130.
- +*Peroniaster nasutulus*, vide sub *Hemiaster*.
- Petalocidaris* vide sub *Cidaris* ; DELAGE (54) p. 227 : rejected ; AGASSIZ (3) p. 22.
- +*Pholidocidaris* defined (p. 22), *P. gaudryi* (p. 23), *P. irregularis* incl. *P. meeki*, descr. (p. 22), *P. tenuis* (p. 23) ; KLEM (142).
- Phormosoma* descr. ; DELAGE (54) p. 221 & fig. *P. sp.* ; BELL (22A). *P. sp.* (p. 32, pl. xii), *P. alternans* descr. (p. 31, pls. iii, xii), *P. bursarium*, young individuals, discussion of Agassiz' figures of young *Phormosoma* (p. 28) ; DE MEIJERE (57). *P. hispidum* descr., growth changes (p. 86, pls. A, B, xxx–xlix, also p. 76–79), *P. panamense* descr. (p. 101, figg.) ; AGASSIZ (3). *P. placenta* juv. descr. ; op. cit. p. 100, pls. xliii, xlvi : protechinus stage ; MORTENSEN (195) p. 54, fig. *P. verticillatum* n. sp., B. of Bengal, 678 fm. ; MORTENSEN (194) p. 90, pl. iv, v. *P. zealandiae* n. sp., Challenger Station 169 = *Asthenosoma gracile* ? of Chall. Rep. ; AGASSIZ (3) p. 105, pl. li.

- Phrissocystis* (v. etiam sub *Argopatagus*); DELAGE (54) p. 273 : diagnosis ; MEISSNER in HAMANN (112) p. 1403 : discussed ; AGASSIZ (3) p. 186. *P. aculeata* descr. ; op. cit. p. 187, pls. lxxx-xc. *P. humilis* descr. ; DE MEIJERE (57) p. 198, pls. x, xxiii : criticised ; AGASSIZ (3) p. 187.
- Phyllacanthus* (v. etiam sub *Cidaris*) ; DELAGE (54) p. 227. *P. australis* ; DE MEIJERE (57) p. 12. *P. baculosa* (p. 138). *P. imperialis* (p. 139) ; HERDMAN (120).
- † *Phymosoma*, vide sub *Cyphosoma*.
- Pilematechinus* n. g. of *Urechinidae* for *Cystechinus rathbuni* A. Ag. genotype and *C. vesica* A. Ag. (p. 163), *P. rathbuni* descr. (p. 165, pls. lxxxix-lxxxvi, also p. 122, 124, 130) ; AGASSIZ (3).
- Plagiobrissus*, vide *Metalia*.
- Platybrissus* (seu *-bryssus*) ; DELAGE (54) p. 273 : diagnosis ; MEISSNER in HAMANN (112) p. 1388.
- Plesianthus*, diagnosis ; MEISSNER in HAMANN (112) p. 1382.
- Plesiadiadema* Pomel, rejected in favour of *Dermatodiadema* A. Ag. ; AGASSIZ (3) p. 59 : replaces *Dermatodiadema* (q. v.) ; MORTENSEN (195) p. 38.
- † *Plesiolampas* discussed ; BATHER (18) p. 292 : probably not to be separated from *Oriolampas* ; LAMBERT in Review. *P. saharæ* n. sp., Eocene, Garadimi & Tamaské in Sokoto ; BATHER (18) p. 293 & figg., pl. xi : see also OPPENHEIM (201) p. 253, 283.
- Plesiozonus* ; DELAGE (54) p. 273 : diagnosis ; DE MEIJERE (57) p. 177 & MEISSNER in HAMANN (112) p. 1389 : discussed ; AGASSIZ (3) p. 183. *P. hirsutus*, descr. ; DE MEIJERE (57) p. 178, 240, pls. vii, xxii.
- Pleurechinus* ; DELAGE (54) p. 241 : distinguished fr. *Temnopleurus* ; MORTENSEN (195) p. 91. *P. bothryoides*, descr., probably incl. *Temnopleurus toreumaticus*? juv. Sladen 1879, and *Temnechinus scillae* Mazzetti 1894 ; DE MEIJERE (57) p. 77, pl. xvi, but see p. 202 : holotype descr., pedicellariae, spicules, &c. ; MORTENSEN (195) p. 83, pls. vi, vii. *P. doederleini* n. sp., G. of Siam, 5-9 fm. ; op. cit. p. 77, pls. i, ii, vi, vii. *P. maculatus* n. sp., Macclesfield Bank, = "*Temnopleurus bothryoides*" Bell, and other Indo-Pacific locc. ; op. cit. p. 89, pl. i : also with *P. reticulatus* n. sp. ; MORTENSEN in DE MEIJERE (57) p. 202, 228. *P. ruber*, maintained (p. 82), pedicellariae, &c. (p. 84, pl. vi, vii), *P. scillae* (Mazzetti sub *Temnechinus*) holotype examined, species redescri., incl. *P. reticulatus* Mrtnsn in Meijere (p. 86, pls. i, ii, vi, vii) ; MORTENSEN (195). *P. siamensis* n. sp., G. of Siam, 3-38 fm., and other Indo-Pacific locc., n. var. *pulchellus*, Amirante and Maldive Is. ; op. cit. p. 79, pls. i, ii, vi, vii : also MORTENSEN in DE MEIJERE (57) pp. 202, 228. *P. variabilis* ; DE MEIJERE (57) p. 79, 202 : these specimens are partly *Genocidaris* sp. nondescr. (p. 94), but the species is an *Opechinus* (p. 82), *P. variegatus* n. sp., Formosa Channel and Japanese Seas (p. 84, pls. i, ii) ; MORTENSEN (195).
- Plexechinus* ; DELAGE (54) p. 267 : diagnosis ; MEISSNER in HAMANN (112) p. 1405 : discussed, compared with *Urechinus* et al. ; AGASSIZ (3) p. 148. *P. cinctus*, descr. ; op. cit. p. 150, pls. lv, lviii-lx, also p. 130.
- Podocidaris* ; DELAGE (54) p. 237. *P.* sp., young, compared with *P. prionigera* and *P. sculpta* ; DE MEIJERE (57) p. 68, pl. xvi.
- Porocidaris* ; DELAGE (54) p. 228, fig. : discussed ; AGASSIZ (3) p. 24. *P. cobosi*, shape of test (p. 1, f. 4), size of actinal system (p. 3, f. 13), anal plates in young (p. 6, f. 20, 21), growth of coronal plates (p. 11, f. 30-42), descr. and discussed (p. 29, pls. ix-xiii) ; AGASSIZ (3). *P. maculicollis*, vide *Cidaris*. *P. milleri* ; DE MEIJERE (57) p. 27 : shape of test (p. 1, f. 6), growth of ambulacra (p. 2, f. 7-10), size of actinal system (p. 3, f. 11) anal plates in young (p. 5, f. 16-19), descr. and discussed (p. 25, pls. vi-viii, x) ; AGASSIZ (3). † *P. pseudoserrata* ; CHECCHIA (37). † *P. schmideli* ; DAINELLI (49) p. 192, & (50).
- Pourtalesia*, descr. ; DELAGE (54) p. 266, figg. : diagnosis ; MEISSNER in

- HAMANN (112) p. 1405 : suggested sections, (a) typical for *P. miranda*, *tanneri*, *laguncula*, & *jeffreysi*, (b) *P. phiale*, (c) *P. ceratopyga* & *rosea*, (d) *P. hispida* (p. 141); AGASSIZ (3). *P. carinata*; BELL (22A): actinal area (p. 127, 128), ditto of *P. ceratopyga* (p. 128) & of *P. hispida* (p. 128, 129); AGASSIZ (3). *P. jeffreysi*, distrib.; GRIEG (106) p. 14: measurements, slight variations; MICHAÏLOVSKIJ (192) p. 163, 184, fig.: actinal area, anal, and apical systems; AGASSIZ (3) p. 126, 128, 129, 134, 135, 137, 138. *P. laguncula*, radioles; DE MEIJERE (57) p. 171, pl. xxi: actinal area; AGASSIZ (3) p. 129, 135. *P. miranda*, older individuals descr. (p. 139, figg.), *P. phiale*, actinal area (p. 129), *P. tanneri*, descr. (p. 132, pls. B, lv-lvii, also p. 125-129); AGASSIZ (3).
- Pourtalesiae* A. Ag., morphology of test (p. 121-132), suggested exclusion of *Urechinidae* & *Paleopneustidae*, and limitation to *Pourtalesia*, *Echinocrepis*, *Spatagocystis*, *Pleurechinus*, & *Sternopatagus* (p. 131); AGASSIZ (3).
- Pourtalesidae*, fully discussed; DE MEIJERE (57) p. 157-171.
- +*Prenaster alpinus*; FUGGER (92) p. 339: GOURDON (102) p. 220.
- Prionechinus*, discussed; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *P. forbesianus*, descr. (p. 71, pls. iv, xvi), *P. sagittiger*, descr. (p. 70, pl. xvi); DE MEIJERE (57).
- +*Procidaris*; DELAGE (54) p. 228.
- Progonolampas*; DELAGE (54) p. 265.
- Prometalia* vide *Metalia*.
- +*Proterocidaris* & *P. giganteus*; KLEM (142) p. 74.
- +*Protocidaris*; KLEM (142) p. 75: perh. young *Echinocystis*; DELAGE (54) p. 217. *P. acuaris*; KLEM (142) p. 75.
- +*Protoechinus* & *P. anceps*; KLEM (142) p. 75.
- Psammechinus* descr.; DELAGE (54) p. 243: diagnosis; MEISSNER in HAMANN (112) p. 1371. +*P. dubius*; DOUXAMI (69) p. 561: descr., distrib.; SCHUETZE (251) p. 166, pl. iii. +*P. gillieronii*; ZLATARSKĪ (299). *P. microtuberculatus*; PARONA (207) p. 384: vide etiam sub *Parechinus*. *P. miliaris*; FUEHNER (89) & (90): GARBOWSKI (94): †determined by T. MORTENSEN; PETERSEN (215) p. 81: vide etiam sub *Parechinus*. +*P. peroni*; COUFFON (46) p. 41. *P. rufus* (Bell sub *Salmacis*) incl. *Gymnechinus pumilio*; MORTENSEN (195) p. 122, pl. v, vii. *P. variegatus*; DELAGE (54) p. 243. *P. verruculatus*, colour; MORTENSEN (195) p. 123: pedicellariae; DE MEIJERE (57) p. 88, pl. xvii.
- +*Pseudasterostoma* discussed; DE MEIJERE (57) p. 242.
- Pseudechinus* descr.; DELAGE (54) p. 246, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1375: rejected; LORIOLO (162) p. 20.
- Pseudoboletia*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1373. *P. indiana* syn. of *P. maculata*; DE MEIJERE (57) p. 208. *P. maculata*; HERDMAN (120) p. 139: pedicellariae; DE MEIJERE (57) p. 96, pl. xvii.
- Pseudocentrotus*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1373.
- +*Pseudocidaris clunifera*; ZLATARSKĪ (299).
- +*Pseudodiadema*; DELAGE (54) p. 235: distinct from *Diadema*; MORTENSEN (195) p. 47. *P. aspera*; WALTHER (281) p. 167. *P. bourgueti*; KARAKASCH (138) p. 15. *P. brongniarti*, distinguished from *P. varicollare*; JUKES-BROWNE (137) p. 455. *P. conforme*; LISSAJOUS (153) p. 161. *P. depressum*; op. cit. p. 159: STRANGWAYS (266) p. 15: ?; CLERC (42) p. 99. *P. inaequale*, compared with *P. wrighti*, a deformity; LISSAJOUS (153) p. 159. *P. jauberti* Cott. is *Hessotiarra*; LAMBERT (148) p. 543. *P. jobae*; LISSAJOUS (153) p. 159. *P. mackiei*, maintained; JUKES-BROWNE (137) p. 456. *P. mamillanum* (p. 162),

- P. neglectum* (p. 161); LISSAJOUS (153). *P. pentagonum*; CLERC (42) p. 100: STRANGWAYS (266) p. 23. *P. primaevum* n. sp., Hettangian of Vendée; LAMBERT (148) p. 540, pl. xviii. *P. princeps*, *P. priscum* (p. 161), *P. subcomplanatum* (p. 159), *P. superbum*, with a swelling (p. 160, pl. ii); LISSAJOUS (153). *P. vagans*; STRANGWAYS (266) p. 15, 23. *P. variolare*; WOLLEMANN (290). *P. versipora*; STRANGWAYS (266) p. 40, 54, 59. *P. wrighti*; LISSAJOUS (153) p. 159.
- +*Pseudodiadematidae* doubtfully accepted; MORTENSEN (195) p. 46.
- +*Pseudodiadematinae*, with list of genera; DELAGE (54) p. 234.
- +*Pseudopedina divionensis*?; LISSAJOUS (153) p. 170.
- +*Pseudosalenia cuevasensis* n. sp., Lower Cretaceous, Honduras; LORIOI (162) p. 57, pl. iv.
- +*Pygaster*:—*P. semisulcatus*; STRANGWAYS (266) p. 9: LISSAJOUS (153) p. 172. *P. trigeri*; op. cit. p. 173.
- Pygastrides* diagnosis; MEISSNER in HAMANN (112) p. 1379.
- +*Pygorhynchus aragonensis*; GOURDON (102) p. 221.
- +*Pygurus*:—*P. depressus* incl. *P. michelini*; LISSAJOUS (153) p. 177. *P. pentagonalis*; STRANGWAYS (266) p. 40, 49. *P. royeri*; LISSAJOUS (153) p. 177.
- +*Pyrina*:—*P. carinata*; FUGGER (92) p. 339: *P. freuchenii*; TÖRNEBOHM (267) p. 143. *P. guerangeri*; LISSAJOUS (153) p. 174: this is a *Menopygus* (*Pyrinodia*); LAMBERT in Review. *P. ovulum*; ROUSSEL (232) p. 15 & (233) p. 28. *P. parryi*; RICHARDSON (227) p. 48. *P. petrocoriensis*; ROUSSEL (232) p. 15 & (233) pp. 28, 36.
- Ravenellia*; DELAGE (54) p. 255.
- Regulariae* [sic] defined, with Orders *Palechin-*, *Echinothur-*, *Cidar-*, & *Diadem-ida*; DELAGE (54) p. 215.
- Rhabdobryssus* (seu- *bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1398.
- Rhabdocidaris*; DELAGE (54) p. 228: diagnosed, and adopted in sense of de Loriol 1882; FOURTAU (83) p. 409. *R. annulifera*, vide sub *Cidaris bispinosa*, *baculosa*. *R. baculosa*, G. of Suez, also †near Suez; FOURTAU (83) p. 410. †*R. caprimontana*; SIEMIRADZKI (255) p. 141. †*R. delgadoi* Loriol 1887 non 1889, radioles descr.; LORIOI (162) p. 65, pl. iv. †*R. heuvelini*, distinguished from *R. ferryi*; LAMBERT in Review of LISSAJOUS (153). *R. imperialis* incl. *R. dubia*, G. of Suez also †at entrance of gulf; FOURTAU (83) p. 411. †*R. maxima*; STRANGWAYS (266) p. 15 & fig. †*R. nobilis*; SIEMIRADZKI (255) p. 141. †*R. phillipsi*; STRANGWAYS (266) p. 59. †*R. pouechi*; GOURDON (102) p. 222. †*R. remus*, †*R. suevica*; SIEMIRADZKI (255) p. 141.
- Rhinobryssus*, diagnosis; MEISSNER in HAMANN (112) p. 1395.
- +*Rhoechinus* defined (p. 27), *R.* sp. Duncan 1889 (p. 30), *R. burlingtonensis* descr. (p. 27); KLEM (142). *R. elegans*; FRAIPONT (85) p. 10, pl. ii: descr.; KLEM (142) p. 28. *R. gracilis* (p. 29), *R. irregularis*, *R. quadriserialis* (p. 30), all descr.; KLEM (142).
- Rhynchopygus*, diagnosis; MEISSNER in HAMANN (112) p. 1386. *R. caribaeorum*, details of text; AGASSIZ (3) p. 119, figg. †*R. marmini*; TÖRNEBOHM (267) p. 136. *R. pacificus*, ambulacrals; AGASSIZ (3) p. 118, 121.
- Rotula* descr.; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1384.
- Rumphia orbicularis*; MARTENS (185).
- Salenia* descr.; DELAGE (54) p. 235, fig. †*S. areolata*; TÖRNEBOHM (267) p. 136. †*S. bourgeoisii*; ROUSSEL (232) p. 15 & (233) pp. 28, 36. †*S. colleti*, Lambert's description quoted; COLLET (44) p. 64, pl. ii. *S. goesiana*, discussed; AGASSIZ (3) p. 36. †*S. granulosa*; ROWE (235) p. 241, 252, 256, 293. *S. hastigera*; AGASSIZ (3) p. 37, pl. xx: radioles; DE MEIJERE (57) p. 43. *S. miliaris* descr., growth-stages; AGASSIZ

- (3) p. 36, 41, pls. xiv-xx. *S. pattersoni*, structural details; op. cit. p. 37, 46, pl. xx: radioles, colour, &c.; DE MEIJERE (57) p. 43. *S. varispina*, holotype very young, redescr. (p. 35, pl. xxi), comparison with *S. miliaris* (p. 45 et sqq. & figg.); AGASSIZ (3).
- Salenidae*, relations to *Cidaridae* & *Echinidae*; AGASSIZ (3) p. 34: brief systematic account; FRITEL (86).
- Saleniinae* defined with list of genera; DELAGE (54) p. 235.
- Salenina* defined with Fam. *Saleniinae*; DELAGE (54) p. 235.
- Salmacis*; DELAGE (54) p. 241: distinguished from *Temnopleurus*; MORTENSEN (195) p. 76. *S. bicolor*; DE MEIJERE (57) p. 85, 203: HERDMAN (120) p. 140: & var. *rarispina*, pedicellariae & spicules, incl. *S. globatrix*, but excl. various specimens placed here by authors; MORTENSEN (195) p. 65, pls. vi, vii. *S. desmoulinsi* Dujardin & Hupé, err. typ. pro *S. dussumieri*; op. cit. p. 74. *S. dussumieri*; HERDMAN (120) p. 140: radioles, pedicellariae, & young; DE MEIJERE (57) p. 85: spicules; MORTENSEN (195) p. 72, pl. vii. *S. elegans* Bell 1899 is *Coelopleurus maillardi*; DE MEIJERE (57) p. 68 & MORTENSEN (195) p. 74. *S. globator*; l. c. *S. rarispina*, descr., also young; DE MEIJERE (57) p. 83, pl. v: holotype examined, not specifically distinct fr. *S. bicolor*; MORTENSEN (195) p. 67. *S. rubrotinctus*; op. cit. p. 74. *S. rufa* Bell, incl. *Gymnechinus pumilio* (q. v.), & is probably *Psammechinus* (q. v.); DE MEIJERE (57) p. 203. *S. sphaeroides*, radioles, pedicellariae, & young; op. cit. p. 82, pl. xvii: incl. *S. sulcata* Ag. & Des., pedicellariae, spicules, buccal membrane, also var. *pyramidata*, but var. *belli* is distinct sp.; MORTENSEN (195) p. 70, pls. v, vi: var. *belli*; DE MEIJERE (57) p. 203. *S. sulcata*; HERDMAN (120) p. 140: Auctt., synn. of various spp.; MORTENSEN (195) p. 74. *S. varius*; l. c. *S. virgulata*, holotype examined, pedicellariae, spicules, incl. *S. conica*, & var. *alexandri*; MORTENSEN (195) p. 68, pls. vi, vii: radioles, pedicellariae (p. 83, pl. xvii), var. *alexandri* (p. 202); DE MEIJERE (57). *S. woodsi*, probably a monstrosity; MORTENSEN (195) p. 74.
- Salmacopsis*; DELAGE (54) p. 241. *S. olivacea*, pedicellariae &c.; MORTENSEN (195) p. 96, pl. vi, vii.
- Schizaster* descr.; DELAGE (54) p. 270, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1392, & FOURTAU (83) p. 433 (vide etiam sub *Moiria*): list of spp. according to apical system, distinguished from other genera, esp. *Linthia*; TORNQUIST (268). †*Schizaster* sp. (= *scillae* Desor); SCHUETZE (251) p. 185. †*S. abductus*; BASEDOW (16). †*S. acuminatus*; TORNQUIST (268) p. 383. *S. canaliculata*; AGASSIZ (3) p. 207, fig. *S. canaliferus*; TORNQUIST (268) p. 376, pl. †*S. aff. degrangei*; GOURDON (102) p. 220. *S. fragilis*; AGASSIZ (3) p. 207, fig.: BELL (22A): TORNQUIST (268) p. 375, pl.: measured; MICHAILOVSKIJ (192) p. 163. *S. gibberulus*; HERDMAN (120) p. 142: L. Ag.'s holotype now destroyed was the specimen figd. by Savigny, pl. vii, f. 5, not f. 6; FOURTAU (83) p. 434, fig. †*S. globulus*; DAINELLI (49) p. 195 & (50). †*S. hova* nondum descr.; TORNQUIST (268) p. 378, pl. [Tornquist refers to a paper by himself at press in Abh. Senckenberg. Nat. Ges. 1904. So far I have been unable to see, borrow, or buy this]. *S. japonicus*, radioles, spicules; DE MEIJERE (57) p. 183, pl. xxii. †*S. lacunosus*; BELLINI (23) p. 5. *S. latifrons* descr., young; AGASSIZ (3) p. 205, pl. cii. *S. limicola*; MARTENS (185). †*S. major*; PATRINI (208). *S. philippii*; AGASSIZ (3) p. 206, figg. †*S. rousseli*; GOURDON (102) p. 220. *S. savignyi* n. sp. pro *S. gibberulus* A. Ag. non L. Ag., Savigny pl. vii, f. 6, G. of Suez (p. 436, pl. i, & fig.) var. nov. *major*, Bay of Mirsa Thlemel (p. 439, pl. i), types in Mus. hist. nat. Paris; FOURTAU (83). †*S. spado*; TORNQUIST (268) p. 387, pl. *S. townsendi* descr., young; AGASSIZ (3) p. 207, pls. c, ci. †*S. vicinalis*; GOURDON (102) p. 219.
- Schizechininae*; DELAGE (54) p. 244.

- Schizocidaris*; DELAGE (54) p. 228.
- +*Scutella* descr.; DELAGE (54) p. 254. *S. aberti*; CLARK (39) p. 432, pls. cxix, cxx. *S. deflersi*; BARRON (15) p. 607. *S. helvetica*; SCHUETZE (251) p. 172. *S. interlineata*; HAEHL (110) p. 24. *S. cf. paulensis*, descr., distrib. of sp.; SCHUETZE (251) p. 170, pl. iv. *S. striatula*, single specimen in coll. M. de Serres, from l'Hérault, is same as *S. ja[c]quemeti* Lor., which name should be used?; LORIOI (162) p. 67.
- Scutellinae* defined with list of genera; DELAGE (54) p. 254.
- Selenechinus*; DELAGE (54) p. 246: **n.g.** of *Echinometridae*, not diagnosed, but with genotype *S. armatus* **n. sp.**, Sulu Sea?, compared with *Heliocidaris* & *Pseudechinus*; DE MEIJERE (57) p. 99, pls. v, xvii.
- Spatangida* defined (p. 248) descr. (p. 256) with Famm. *Cassidul*-, *Holaster*-, & *Spatanginae* (p. 263); DELAGE (54).
- Spatangidae*, vide *Eobryssus*.
- Spatanginae* defined with list of genera in groups *Prymnodesminae*, *Prymnadetinae*, *Adetinae*; DELAGE (54) p. 267.
- Spatagocystis*; l. c.: diagnosis; MEISSNER in HAMANN (112) p. 1405. *S. challenger*, additional details from an undescribed Challenger specimen; AGASSIZ (3) p. 141, pls. lxx, lxxi also p. 122, 123, 127, 128, 130.
- Spatagodesma*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1406: compared with *Agassizia* (p. 198), apical system (p. 173, f. 289, pl. cvi). *S. diomedae* descr. (p. 200, pls. cvi, cvii); AGASSIZ (3).
- +*Spatangopsis*, & *S. costata*; KLEM (142) p. 75.
- Spatangus* descr.; DELAGE (54) p. 267, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1396. +*S. delphinus*; DOUXAMI (69) p. 561: descr., distinguished from *S. desmaresti*, comparative measurements, distrib.; SCHUETZE (251) p. 181, pl. v: differs from Burdigalian type; LAMBERT in Review. +*S. deydieri*; DOUXAMI (69) p. 561. +*S. gottschei* Gage is a *Maretia*; LAMBERT in Review of GAGEL. +*S. ocellatus*; SCHUETZE (251) p. 185. +*S. prunella*; LAMBERT (147) p. 21, 22. *S. purpureus*; CLERC (41); HENRI (116) p. 13: MAR. BIOL. ASS. (184) p. 211. *S. raschi*; BELL (22A).
- Sperosoma* descr.; DELAGE (54) p. 224, fig.: origin of ambulacrals; AGASSIZ (3) p. 81. *S. quincunciale* **n. sp.**, S. of Timor, 883 m.; DE MEIJERE (57) p. 40, pl. xiii.
- Sphaerechinus* descr.; DELAGE (54) p. 244, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1373. *S. australiae* is young of *Pseudoboletia maculata*; DE MEIJERE (57) p. 208. *S. granularis*; DI MAURO (63); HENRI (116) p. 13: HERBST (117); VIGUIER (277).
- +*Spileccia*, placed in *Arbaciinae*; DELAGE (54) p. 238.
- Stegaster*; DE MEIJERE (57) p. 170.
- +*Stenonia* discussed; DE MEIJERE (57) p. 242.
- Stephanocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 228. *S. bispinosa*; HERDMAN (120) p. 138: incl. *Cidaris luetkeni*, holotypes examined, descr., young; MORTENSEN (195) p. 6, pl. iii-v.
- Sterechinus*; DELAGE (54) p. 243: diagnosis; MEISSNER in HAMANN (112) p. 1370: discussed and restricted to *S. antarcticus*; LORIOI (162) p. 16. *S. magellanicus*; DE MEIJERE (57) p. 208.
- Stereocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 227, fig.: cause of absence of apical radioles; DE MEIJERE (57) p. 6. *S. canaliculata* (p. 691), *S. nutrix* (p. 690); LUDWIG (164). +*S. sceptriifera*; WOLLEMAN (289).
- Stereopneustes*; DELAGE (54) p. 265: diagnosis; MEISSNER in HAMANN (112) p. 1403: diagnosis (p. 147) compared with *Urechininae* (p. 151) & *Echinocorytidae* (p. 152). *S. relictus*, described (p. 148, 239, pls. v, xix, xx); DE MEIJERE (57).
- Sternopatagus*; DELAGE (54) p. 267: discussed; AGASSIZ (3) p. 131:

diagnosis ; MEISSNER in HAMANN (112) p. 1404 : diagnosis (p. 154) systematic position discussed (p. 160), *S. sibogae* descr. (p. 155, 239, pls. vii, xx, xxi) ; DE MEIJERE (57).

+*Stirechinus suevicus* n. sp., Helvetian, Bryozoa sand of Uрсendorf, Suabia ; SCHUETZE (251) p. 169, pl. iii.

"Stomechiniens" Pomel, discussed ; DELAGE (54) p. 238.

+*Stomechinus* :—*S.* spp. nondescr. ; WELSCH (283) p. 27. *S. aroviensis* ; SIEMIRADZKI (255) p. 141. *S. germinans* ; LISSAJOUS (153) p. 170. *S. perlatus* ; WALTHER (281) p. 167. Ditto ?, *S. serratus*, *S. sulcatus* ; LISSAJOUS (153) p. 171.

Stomopneustes descr. ; DELAGE (54) p. 241. *S. variolaris* ; DE MEIJERE (57) p. 87 ; HERDMAN (120) p. 139.

Stomopneustesinae defined with list of genera ; DELAGE (54) p. 241.

Stomopneustidae maintained ; MORTENSEN (195) p. 47.

Strongylocentrotinae ; DELAGE (54) p. 245.

Strongylocentrotus descr. ; DELAGE (54) p. 245, figg. : diagnosis ; MEISSNER in HAMANN (112) p. 1374. *S. drobachiensis* ; BERTRAND (27) : KIAER (140) : MICHAILOVSKIJ (192) p. 162 : descr., range ; CLARK (38) p. 563, pl. ix. *S. erythrogrammus* ; HALL (111) p. 71. *S. lividus* ; +ACLAND (2) : see II, c, vii ; BERTOLO (26) : DI MAURO (63) : DUBUISSON (73) : FUEHNER (90) : HENRI (116) p. 11–13 : HERBST (117) & (119) : NOBRE (198) p. 55 & (199) : PETRUNKEWITSCH (217) : VIGUIER (277) : ZIEGLER (298) : vide etiam sub *Paracentrotus*. *S. purpuratus* ; LOEB (155, 156, 158, 159).

Studeria diagnosis ; MEISSNER in HAMANN (112) p. 1387.

Temnechininae, sub-fam. of *Temnopleuridae* (q. v.) replaces *Trigonocidarinae* ; MORTENSEN (195) p. 112.

Temnechinus, no proof of viviparity ; AGASSIZ (3) p. 220. +*T. gajensis*, +*T. stellulatus* ; MORTENSEN (195) p. 93.

+*Temnocidaris danica* ; TÖRNEBOHM (267) p. 143.

Temnopleuridae, classification discussed (p. 56) subfamm. 1. *Temnechininae* for *Hypsiechinus*, *Prionechinus*, *Genocidaris*, *Trigonocidaris*, *Temnechinus*, *Opechinus*, *Ortholophus*, *Paradoxechinus*, *Coptophyma*, *Lepidopleurus*, 2. *Temnopleurinae* for *Temnopleurus*, *Pleurechinus*, *Salmacis*, *Salmacopsis*, *Mespilia*, *Microcyphus*, *Amblypneustes*, *Goniopneustes*, *Holopneustes* (p. 113) ; MORTENSEN (195).

Temnopleurinae, as Fam. ; DELAGE (54) p. 241 : as subfam. of *Temnopleuridae* (q. v.) ; MORTENSEN (195) p. 113.

Temnopleurus distinguished from *Salmacis* (p. 76), *T. cavernosus* is *Pleurechinus*, perhaps *P. bothryoides* (p. 64), *T. hardwicki* maintained, though cotypes are doubtful, incl. *T. japonicus* (p. 61), *T. reevesi*, incl. *T. reynaudi* A. Ag. et Auctt., non Ag. & Desor, pedicellariae & spicules descr. (p. 62, pls. vi, vii) ; MORTENSEN (195). *T. reynaudi*, pedicellariae & young ; DE MEIJERE (57) p. 81, pls. xvi, xvii. *T. toreumaticus* ; HERDMAN (120) p. 140 : +FOURTAU (83) p. 444 : radioles, pedicellariae ; DE MEIJERE (57) p. 80, 202, pl. xvi : incl. *T. reynaudi*, *T. granulatus*, but not *T. hardwicki*, also excl. many specimens placed here by authors, pedicellariae and spicules descr. ; MORTENSEN (195) p. 58, pl. vi, vii.

Temnopleurusinae defined with list of genera ; DELAGE (54) p. 239.

Temnotrema rejected, *T. sculpta* ; MORTENSEN (195) p. 61.

+*Tetracidaris* ; DELAGE (54) p. 229 : origin of interambulacra ; AGASSIZ (3) p. 82.

Tetrodiscus diagnosis, incl. *Echinodiscus* & *Lobophora* (p. 423), *T. auritus*, variations, G. of Suez and +beaches (p. 425), *T. bisperforatus* (= *biforis*), G. of Suez and +beaches, the latter confused by Walther with *Amphiope fuchsi*, measurements, incl. *Lobophora truncata* (p. 426) ; FOURTAU (83).

- +*Thylechinus*; DELAGE (54) p. 238.
 +*Tiarechinus*; DELAGE (54) p. 219.
 +*Tiarechinusinae* defined, incl. *Lysechinus*; DELAGE (54) p. 219.
 +*Tiarinae*; DELAGE (54) p. 234.
 +*Tipocidaris*:—*T. clavigera* (p. 76), *T. hirudo* (pp. 70, 77); COLLET (44).
Toreumatica rejected (p. 61) but might be used for *Temnopleurus reevesi* (p. 76); MORTENSEN (195).
 +*Toxaster*:—*T. complanatus*; STRANGWAYS (266) p. 73. *T. texanus*; UDDEN (273) p. 35, 37.
Toxobrissus distinguished from *Brissopsis* (p. 193), *T. pacificus* descr. (p. 192, pls. ciii, cv); AGASSIZ (3).
Toxocidaris; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376.
Toxopneustes descr.; DELAGE (54) p. 244, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1372. +*T. delavayi*; COUFFON (46) p. 41. *T. lividus*, vide sub *Paracentrotus*. *T. pileolus*; HERDMAN (120) p. 140: radioles, spicules, pedicellariae; DE MEIJERE (57) p. 92, pl. xvii: distinguished from *Echinus trizonalis* & *Boletia bizonata*; MORTENSEN (195) p. 120. *T. variegatus*, vide sub *Psammechinus*.
Toxopneustesinae defined with list of genera; DELAGE (54) p. 243.
 +*Trachyaster* (v. etiam sub *Hemiaster*):—*T. gourdoni*, *T. trutati*; GOURDON (102) p. 220.
 +*Trachypatagus meneghini*; DAINELLI (50), & descr. (49) p. 197, pl. xv.
Tretocidaris; DELAGE (54) p. 228.
Trigonocidarinae; DELAGE (54) p. 240.
Trigonocidaris descr.; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *T. albida*, Sulu Is., var. (p. 73, 202), *T. monolini* referred to *Genocidaris* (q. v.) (p. 74); DE MEIJERE (57).
Triopneustes descr.; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1372. *T. gratilla*; MARTENS (185) p. 131: (= *variegatus* & *angulosus* Leske), colour, spicules; DE MEIJERE (57) p. 95.
Tripylus; DELAGE (54) p. 271, fig.
Tromikosoma; DELAGE (54) p. 223, fig. *T. mordens* n. sp., S. of Timor, 2050m.; DE MEIJERE (57) p. 39, pl. xiii.
Urechinidae, n. fam. for *Urechinus*, *Cystechinus*, *Calymne*, *Phrissocystis*; MEISSNER in HAMANN (112) p. 1402: as sub-fam. [of *Spatangidae*?], incl. *Urechinus*, *Cystechinus*, *Pilematechinus* n. g., & *Calymne* (p. 131), as fam. of "Ananchytid *Spatangoids*" (p. 150), as sub-fam. of *Ananchytidae* (p. 152); AGASSIZ (3).
Urechinus diagnosis; MEISSNER in HAMANN (112) p. 1402. *U. giganteus* descr.; AGASSIZ (3) p. 152, pls. lxxii–lxxiv, also p. 130. *U. naresianus*; BELL (22A): actinal area (p. 122, 130, 154 & figg.) apical system (p. 156 & fig., pl. lxxiv); AGASSIZ (3).
 +*Xenocidaris*, *X. clavigera*, *X. conifera*, *X. cylindrica*; KLEM (142) pp. 75–76.
 +*Zeuglopleurus*; MORTENSEN (195) p. 112. *Z. rowei*, in *Marsupites* zone; ROWE (235) p. 255, 256, 293.

(D).—ASTEROIDEA.

- Asteridia* divided into Subclass 1, *Palasteridiae*, 2, *Euasteridiae*, the latter alone into Orders 1, *Phanerozonida*, 2, *Cryptozonida*, each with its Families; DELAGE (54) p. 82 sqq.
Acantharchaster; DELAGE (54) p. 86.
Acanthaster; op. cit. p. 102. *A. solaris*; MARTENS (185).
Acanthasterinae; DELAGE (54) p. 102.

Acodontaster; DELAGE (54) p. 87.

Amphiaster; DELAGE (54) p. 93.

Anasterias; op. cit. p. 103. *A. belgicae*, *A. chirophora*; LUDWIG (164) p. 699. *A. perrieri*; MEISSNER (186) p. 12. *A. studeri*; loc. cit.: LUDWIG (164) p. 698.

Anthenea, descr.; DELAGE (54) p. 91. *A. sp.*; HERDMAN (120) p. 144. †*A. schlumbergeri* descr.; LORIOLO (162) p. 63, pl. iv.

Antheneinae, defined, with list of genera; DELAGE (54) p. 91.

Antheniaster; DELAGE (54) p. 91.

Anthenoides; DELAGE (54) p. 91.

Archaster descr.; DELAGE (54) p. 85. *A. sp.*; KIAER (140).

Archasteridae, vide *Goniodon*.

Archasterinae defined, with list of genera; DELAGE (54) p. 85.

Archacanthion rubens; JANNSENS (136).

Asterias (vide etiam sub *Diplasterias*): descr.; DELAGE (54) p. 103, figg.: brachiolaria; WEYSSE (284) p. 91, 92, figg. *A. sp.*; LUDWIG (164) p. 697, 698. *A. antarctica*; loc. cit.: descr.; LORIOLO (162) p. 36, pl. iv: incl. all S. American monacanthid spp.; MEISSNER (186) p. 10, pl. i. *A. austera*, descr., range; CLARK (38) p. 555, pls. ii, iv. *A. capitata*; LOEB (158, 159). *A. compta*, syn. of *A. tenera*; CLARK (38) p. 554. *A. (Polyasterias) fernandensis*, descr.; LORIOLO (162) p. 41, pl. iii. *A. forbesi*, descr., range; CLARK (38) p. 552, pls. i, iv. *A. glacialis*; CLERC (41): DELAGE (52): GARBOWSKI (93): HERBST (117): HÉROUARD (122): MAR. BIOL. ASS. (184) p. 208: NOBRE (198) p. 52, & (199). *A. lincki*; MICHAÏLOVSKIJ (192) p. 165. †*A. cf. lumbricalis*; SCHAEFER (242) p. 31. *A. (Cosmasterias) lurida* descr.; LORIOLO (162) p. 39, pl. iii. *A. muelleri*; LUDWIG (164) p. 697: northern var., probably = *A. hyperborea* Dan. & Kor.; MICHAÏLOVSKIJ (192) p. 165. *A. ochracea*; LOEB (158, 159). *A. pallida*, homonym of *A. vulgaris*; CLARK (38) p. 554. *A. panopla*; MICHAÏLOVSKIJ (192) p. 165. *A. perrieri*; LUDWIG (164) p. 698. *A. polaris*; ÖSTERGREN (202). *A. rubens*; DUBOIS (72): GIARD (100): KIAER (140): MAR. BIOL. ASS. (184) p. 208: NOBRE (198) p. 53, & (199). *A. tenera*, incl. *A. compta*, descr., range; CLARK (38) p. 554, pls. ii, iv. *A. tenuispina*; NOBRE (199). *A. vulgaris*; WEYSSE (284) p. 94, fig.: descr., range; CLARK (38) p. 553, pls. i, iv.

Asteriasinae, defined with list of genera; DELAGE (54) p. 103.

Asterina, descr.; DELAGE (54) p. 94, figg. *A. cepheus*; HERDMAN (120) p. 145: MARTENS (185). *A. coronata*, *A. exigua*, op. cit. *A. fimbriata*; MEISSNER (186) p. 16. *A. gibbosa*; MAR. BIOL. ASS. (184) p. 207: NOBRE (198) p. 53 & (199). *A. perrieri* n. sp., Port San Antonio, Patagonia; LORIOLO (162) p. 27, pl. ii. *A. stellifera*; MEISSNER (186) p. 16.

Asterinininae, defined as Fam. with list of genera (p. 94), as sub-fam. (p. 95); DELAGE (54).

Asteroderma; DELAGE (54) p. 103.

Asterodiscus; DELAGE (54) p. 93.

Asterodon; DELAGE (54) p. 86.

Asteropsis; DELAGE (54) p. 94.

Astellia young of *Luidia*; DELAGE (54) p. 88.

Astrogoniinae; DELAGE (54) p. 91.

Astrogonium; loc. cit. *A. patagonicum*; MEISSNER (186) p. 18.

Astropecten descr.; DELAGE (54) p. 87, figg. *A. andromeda*; KIAER (140). *A. aurantiaca*; NOBRE (199). †*A. elegans*; WALTHER (281) p. 166. *A. euryacanthus*; HERDMAN (120) p. 143. †*A. helveticus*; SCHUETZE (251) p. 156. *A. hemprichi*; HERDMAN (120) p. 143: incl. *A. zebra*, & ? *A. notograptus*; BELL in op. cit. p. 149. *A. indicus*; op. cit. p. 143. *A. irregularis*; NOBRE (198) p. 53: MAR. BIOL. ASS. (184) p. 207. †*A. leckenbyi*; STRANGWAYS (266) p. 15. *A. polyacanthus*;

- HERDMAN (120) p. 143. +*A. rectus* (p. 40), +*A. scarburgensis* (p. 15); STRANGWAYS (266). *A. subinermis*; NOBRE (199). *A. velitaris*; BELL in HERDMAN (120) p. 150. *A. zebra*; op. cit. p. 143: photograph of 3 cotypes, see *A. hemprichi*; BELL in op. cit. p. 149.
- Astropecteninae* defined as Fam., with list of genera; DELAGE (54) p. 87.
- Astropectininae* as Subfam.; DELAGE (54) p. 88.
- Bathybiaster*; loc. cit. *B. loripes*; MEISSNER (186) p. 19. *B. pallidus* syn. of *B. vexillifer*; GRIEG (106) p. 14: incl. *B. vexillifer* & *Ilyaster mirabilis*; ÖSTERGREN (202).
- Benthaster*; DELAGE (54) p. 99.
- Blakia*; DELAGE (54) p. 86.
- Brisinga*, descr.; DELAGE (54) p. 104.
- Brisingaster*; DELAGE (54) p. 104.
- Brisinginae*, defined, with list of genera; loc. cit.
- Bunaster*; DELAGE (54) p. 98.
- Calliaster*; DELAGE (54) p. 91.
- Calliderma*; DELAGE (54) p. 91.
- Calvasterias*; DELAGE (54) p. 103.
- Calveria*; DELAGE (54) p. 100.
- Calveriaster* **nom. nov.** pro *Calveria* Carp., Jeffr., & Thomson 1870, non Thomson 1873; DELAGE (54) p. 100.
- Calycaster*; DELAGE (54) p. 103.
- Calyptroaster*; DELAGE (54) p. 99.
- Caulaster*; DELAGE (54) p. 89.
- Chaetaster*; DELAGE (54) p. 99 & fig.
- Chaetasterinae*; DELAGE (54) p. 99.
- Cheiraster*; DELAGE (54) p. 86 & fig.
- Chitonaster*; DELAGE (54) p. 91.
- Choriaster*; DELAGE (54) p. 93.
- Cnemidaster*; DELAGE (54) p. 102 & fig.
- Colpaster*; DELAGE (54) p. 105.
- Coronaster*; op. cit. p. 103. *C. octoradiatus*; MEISSNER (186) p. 5.
- Cosmasterias*, vide sub *Asterias* et *Diplasterias*.
- Craspidaster*; DELAGE (54) p. 88.
- Crenaster* Perr.; DELAGE (54) p. 86.
- Cribra*; op. cit. p. 101. *C. sladeni*; MEISSNER (186) p. 13.
- Crib[r]ella*; DELAGE (54) p. 101. *C. oculata*; NOBRE (199). *C. pagenstecheri*, incl. all Antarctic spp.; MEISSNER (186) p. 13. *C. sanguinolenta*; LUDWIG (164) p. 697: descr., range; CLARK (38) p. 555, pls. iii, iv: formae *laevior* and *scabrior* not clearly separated; MICHAÏLOVSKIJ (192) p. 166.
- Crossaster*, descr.; DELAGE (54) p. 100. *C. australis*; MEISSNER (186) p. 17. *C. papposus*, 2 forms distinguished; MICHAÏLOVSKIJ (192) p. 169.
- Cryptaster*; DELAGE (54) p. 99.
- Cryptozonida*, defined, with Fam. *Linck-*, *Pteraster-*, *Solaster-*, *Echinaster-*, *Zoroaster-*, *Stichaster-*, *Heliaster-*, *Pedicellaster-*, *Asterias-*, *Brisinginae*; DELAGE (54) p. 96-105.
- Ctenaster*; DELAGE (54) p. 100.
- Ctenodiscus*; op. cit. p. 89. *C. australis*; MEISSNER (186) p. 18. *C. corniculatus*; MICHAÏLOVSKIJ (192) p. 171. *C. procurator*; MEISSNER (186) p. 18.
- Culcita*, descr.; DELAGE (54) p. 93, figg. *C. schmideliana*, living appearance; HERDMAN (120) p. 144.
- Cycethra*; DELAGE (54) p. 95. *C. electilis*, descr. (p. 23, pl. ii), *C. lahillei* n. sp., San Mathias Gulf, Patagonia (p. 25, pl. ii), *C. simplex*, descr., distinguished from *Goniodiscus verrucosus* Phil. (p. 21, pl. ii); LORIOLO (162). *C. verrucosa*, incl. *C. simplex*; MEISSNER (186) p. 14.
- Dermasterias*; DELAGE (54) p. 94.

Dictyaster ; DELAGE (54) p. 101.

Diplasterias (vide etiam sub *Asterias*) *alba* (p. 9), *D. brandti*, incl. *Asterias neglecta*, *belli*, and *glomerata*, and all probably synn. of *D. meridionalis* (p. 7), *D. georgiana* (p. 9), *D. germaini* (p. 7), *D. loveni* (p. 9) ; MEISSNER (186). *D. luetkeni* ; loc. cit. : LUDWIG (164) p. 698. *D. lurida*, incl. *Asterias obtusispinosa* (p. 8), *D. meridionalis* (p. 8), *D. philippii* (p. 9), *D. spinosa* (p. 9) ; MEISSNER (186). *D. steineni* ; loc. cit. : LUDWIG (164) p. 698.

Diplopteraster ; DELAGE (54) p. 99.

Dipsacaster ; DELAGE (54) p. 88.

Disasterina ; DELAGE (54) p. 95.

Dorigona ; DELAGE (54) p. 91.

Dytaster ; DELAGE (54) p. 86.

Echinaster descr. ; op. cit. p. 101, figg. *E. antonioensis* (p. 29, pl. ii), *E. lepidus* (p. 30, pl. ii), **n. spp.**, Port San Antonio, Patagonia ; LORIOI (162). *E. oculatus* ; NOBRE (199). *E. purpureus* ; HERDMAN (120) p. 145. *E. sepositus* ; NOBRE (199).

Echinasterinae, defined as Fam. with list of genera, also as Subfam. ; DELAGE (54) p. 101. Vide etiam *Lakillea*.

+*Echinodiscaster* **nom. mut.** pro *Echinodiscus* Stürtz non Ag. ; DELAGE (54) p. 84.

Eugoniaster ; DELAGE (54) p. 90.

Ferdina ; DELAGE (54) p. 98.

Freyella ; DELAGE (54) p. 105.

Fromia ; DELAGE (54) p. 98.

Ganeria ; op. cit. p. 95, *G. falklandica* ; MEISSNER (186) p. 14.

Ganerinae ; DELAGE (54) p. 95.

Gastraster ; op. cit. p. 103 : discussed (p. 35), *G. studeri* **n. sp.**, Port San Antonio, Patagonia (p. 34, pl. iv) ; LORIOI (162).

Gnathasterinae ; DELAGE (54) p. 86.

+*Goniaster arduennensis* ; COLLET (44) p. 77.

Goniodiscinae ; DELAGE (54) p. 91.

Goniodiscus ; loc. cit. : *G.?* sp. juv. ; HERDMAN (120) p. 144. *G. verrucosus* ; LORIOI (162) p. 22.

Goniodon **n. g.** of *Gnathasterinae*, Subfam. of *Archasteridae* ; PERRIER (92) Zool. Rec. 1894, Stellérides du Travailleur, p. 244, non HERRICK, Bull. Denison Univ. 1888, a Mollusc : DELAGE (54) p. 87.

Goniopecten ; DELAGE (54) p. 86.

Gymnasterias, descr. ; DELAGE (54) p. 93, fig.

Gymnasteriasinae, defined with list of genera ; loc. cit.

Gymnobrisinga ; DELAGE (54) p. 104.

Hacelia ; DELAGE (54) p. 98, fig.

Heliaster, descr. ; DELAGE (54) p. 103.

Heliasterinae, defined with list of genera ; loc. cit.

Henricia sanguinolenta ; COLE (43) : MAR. BIOL. ASS. (184) p. 208 : NOBRE (199).

Hexaster ; DELAGE (54) p. 99. *H. obscurus* ; LUDWIG (164) p. 696.

Hippasteria ; DELAGE (54) p. 92. *H. hyadesi* ; MEISSNER (186) p. 18.

Hoplaster ; DELAGE (54) p. 87.

Hymenaster ; DELAGE (54) p. 99, fig. *H. nobilis* ; LUDWIG (164) p. 697. *H. pellucidus* ; MICHAILOVSKIJ (192) p. 167. *H. praecoquis* ; LUDWIG (164) p. 697.

Hyphalaster ; DELAGE (54) p. 89 & fig.

Iconaster ; DELAGE (54) p. 91.

Ilyaster ; DELAGE (54) p. 88.

Korethraster ; DELAGE (54) p. 100. *K. hispidus* ; MICHAILOVSKIJ (192) p. 185.

Korethrasterinae ; DELAGE (54) p. 100.

- Labidiaster*; op. cit. p. 104, figg. *L. radiosus*; MEISSNER (186) p. 4.
Lahillea n. g. of *Echinasteridae* (p. 32) with genotype *L. mira* n. sp., San Mathias Gulf, Patagonia (p. 33, pl. iii); LORIOL (162).
Lasiaster; DELAGE (54) p. 94. *L. hispidus* is *Poraniomorpha* (q. v.); ÖSTERGREN (202).
Lebrunaster; DELAGE (54) p. 95. *L. paxillosus*; MEISSNER (186) p. 16.
Leiaster; DELAGE (54) p. 98.
Leptasterias, rejected; CLARK (38) p. 555.
Leptogonaster; DELAGE (54) p. 87.
Leptogonasterinae; DELAGE (54) p. 87.
Leptoptychaster; op. cit. p. 88. *L. arcticus*; MICHAILOVSKIJ (192) p. 170. *L. kerguelenensis*; LUDWIG (164) p. 695.
Linckia, descr.; DELAGE (54) p. 97, fig. *L. diplax*; KELLOGG (139). *L. laevigata*; MARTENS (185); HERDMAN (120) p. 145: *L. multiforis*; loc. cit. *L. pacifica*; KELLOGG (139): var *diplex*; HERDMAN (120) p. 145.
Linckinae subfam.; DELAGE (54) p. 98.
Linckinae, defined as Fam., with list of genera; op. cit. p. 97.
Litonotaster; DELAGE (54) p. 90.
Lonchotaster; DELAGE (54) p. 86.
Lophaster; op. cit. p. 100. *L. furcifer*; MICHAILOVSKIJ (192) p. 168. *L. pentactis*, *L. stellans*; MEISSNER (186) p. 16.
Lophopteraster; DELAGE (54) p. 99.
Ludia, descr.; op. cit. p. 88, fig. *L. bellonae*; MEISSNER (186) p. 19. *L. hardwickii*, and young?, *L. maculata*; HERDMAN (120) p. 143. *L. sarsi*; MAR. BIOL. ASS. (184) p. 207.
Luidiaster; DELAGE (54) p. 86.
Luidiinae; DELAGE (54) p. 88.
Lytaster; DELAGE (54) p. 103.
Marginaster; DELAGE (54) p. 94.
Marsipaster; DELAGE (54) p. 99.
Mediaster; DELAGE (54) p. 91.
Metopaster; DELAGE (54) p. 91.
Metrodira; op. cit. p. 99. *M. subulata*; HERDMAN (120) p. 145.
Metrodirinae; DELAGE (54) p. 99.
Mitteliaphaster; DELAGE (54) p. 91.
Mimaster; DELAGE (54) p. 87.
Mimasterinae; DELAGE (54) p. 87.
Mithrodia; DELAGE (54) p. 102.
Mithrodiinae; DELAGE (54) p. 102.
Moiraster; DELAGE (54) p. 88.
Myxaster; DELAGE (54) p. 100.
Narcissia; DELAGE (54) p. 99.
Nardoa; op. cit. p. 98. +*Nardoa? fourtaui* n. sp., Santonian, Abou Roach, Egypt; LORIOL (162) p. 65, pl. iv. *N. tuberculata*; HERDMAN (120) p. 145.
Nectria; DELAGE (54) p. 91.
Neomorphaster; DELAGE (54) p. 102.
Nepanthia; DELAGE (54) p. 95.
Nidorellia; DELAGE (54) p. 92.
Nymphaster; DELAGE (54) p. 91.
Odinia; DELAGE (54) p. 104.
Odontaster; op. cit. p. 86. *O. belli*, *O. granulatus* (p. 20), *O. penicillatus*, *O. singularis* (p. 19); MEISSNER (186).
Ogmaster; DELAGE (54) p. 91.
Ophidiaster; op. cit. p. 98, fig. *O. cylindricus*, *O. helicostichus*, juv.; HERDMAN (120) p. 145.
+*Palaeaster*; DELAGE (54) p. 83, figg.

Palmipedinae; DELAGE (54) p. 95.

Palmipes, descr.; loc. cit., figg. *P. placenta*; MAR. BIOL. ASS. (184) p. 207.

Paragonaster; DELAGE (54) p. 91.

Pararchaster; DELAGE (54) p. 86.

Pararchasterinae; DELAGE (54) p. 86.

Patiria; DELAGE (54) p. 95.

Paulia; DELAGE (54) p. 93.

Pectinaster; DELAGE (54) p. 86.

Pedicellaster, descr.; op. cit. p. 103. *P. sarsi*, *P. scaber*; MEISSNER (186) p. 5. *P. sexradiatus*; BERTRAND (27).

Pedicellasterinae, defined with list of genera; DELAGE (54) p. 103.

Peltaster; DELAGE (54) p. 90.

Pentaceropsis; DELAGE (54) p. 93. *P. obustatus*; MARTENS (185).

Pentaceros, descr.; DELAGE (54) p. 92, figg. *P. sp. juv.*; HERDMAN (120) p. 144. †*P. jurassicus*; WALTHER (281) p. 166. *P. lincki* (p. 144, 147, fig.), *P. mammillatus* (p. 144); HERDMAN (120). *P. nodosus*; loc. cit.: MARTENS (185). †*P. pustuliformis*; WALTHER (281) p. 167. *P. reticularis*; WEYSSE (284) p. 93, fig. *P. turritus*; MARTENS (185) p. 133.

Pentacerosinae, defined, with list of genera; DELAGE (54) p. 92.

Pentagonaster, descr.; op. cit. p. 89, figg. *P. austro-granularis* (p. 17), *P. patagonicus* (p. 18); MEISSNER (186).

Pentagonasterinae, defined, as Fam. with list of genera (p. 89), as subfam. (p. 90); DELAGE (54).

Peribolaster; op. cit. p. 100. *P. folliculatus*; MEISSNER (186) p. 17.

Perknaster; DELAGE (54) p. 101.

Persephonaster; DELAGE (54) p. 86.

Phaneraster; DELAGE (54) p. 91.

Phanerozonida, **nom. mut.** pro *Phanerozonia*, defined with Famm. *Archaster*-, *Astropecten*-, *Porcellanaster*-, *Pentagonaster*-, *Anthene*-, *Pentaceros*-, *Gymnasterias*-, *Asterinae*; DELAGE (54) p. 84–96.

Pharia; DELAGE (54) p. 98.

Phataria; loc. cit. *P. unifascialis* var. *bifascialis*; MONKS (193).

Pholidaster; DELAGE (54) p. 102.

Phoxaster; DELAGE (54) p. 88.

Platasterias; DELAGE (54) p. 88.

Plectaster; DELAGE (54) p. 101.

Plutonaster; op. cit. p. 86, fig. *P. parelii*; MICHAILOVSKIJ (192) p. 171.

Plutonasterinae; DELAGE (54) p. 86.

Polyasterias, vide sub *Asterias*.

Pontaster; DELAGE (54) p. 86. *P. tenuispinus*; MICHAILOVSKIJ (192) p. 171.

Porania; DELAGE (54) p. 94. *P. antarctica*; MEISSNER (186) p. 17. *P. pulvillus*; MAR. BIOL. ASS. (184) p. 207.

Poraniomorpha; DELAGE (54) p. 94. *P. hispida* incl. *P. rosea* as var., & *L. villosus* as young of var., also ? *P. borealis*; ÖSTERGREN (202).

Poraniopsis; DELAGE (54) p. 94. *P. echinasteroides*; MEISSNER (186) p. 17.

Porcellanaster, descr.; DELAGE (54) p. 89 & figg.

Porcellanasterinae, defined, with list of genera; loc. cit.

Prionaster; DELAGE (54) p. 86.

Prognaster; DELAGE (54) p. 102.

Pseudarchaster discus; MEISSNER (186) p. 20.

Pseudaster; DELAGE (54) p. 89.

Pseudoreaster; DELAGE (54) p. 92.

Psilaster; op. cit. p. 88. *P. fleurbaei*; MEISSNER (186) p. 19.

Pteraster, descr.; DELAGE (54) p. 99. *P. ingouffi* (p. 13), *P. lebruni*

- (p. 14); MEISSNER (186). *P. militaris*; LUDWIG (164) p. 696 :
 MICHAÏLOVSKIÏ (192) p. 168. *P. pulvillus*; loc. cit.
Pterasterinae, defined, with list of genera; DELAGE (54) p. 99.
Pycnospodia; op. cit. p. 104. *P. spuria*; LOEB (155, 158, 159).
Pyrenaster; DELAGE (54) p. 90.
Pythonaster; DELAGE (54) p. 99.
Radiaster; DELAGE (54) p. 100.
Randasia; DELAGE (54) p. 93.
Retaster; op. cit. p. 99. *R. cribrosus*; HERDMAN (120) p. 145: ? juv.;
 BELL in op. cit. p. 150. *R. gibber*; MEISSNER (186) p. 14. *R. insignis*;
 BELL in HERDMAN (120) p. 150. *R. verrucosus*; MEISSNER (186)
 p. 14.
Rhegaster; DELAGE (54) p. 94, fig. *R. tumidus* incl. *R. murrayi*;
 ÖSTERGREN (202): var. *tuberculata*; MICHAÏLOVSKIÏ (192) p. 170.
Rhipidaster; DELAGE (54) p. 100.
Rosaster; DELAGE (54) p. 91.
Scaphaster; DELAGE (54) p. 94.
Sideriaster; DELAGE (54) p. 88.
Solaster; op. cit. p. 100. *S. affinis* syn. of *S. papposus*; ÖSTERGREN
 (202). *S. endeca*; MICHAÏLOVSKIÏ (192) p. 168: descr., range; CLARK
 (38) p. 556, pls. iii, iv. *S. glacialis* is 7-rayed *S. endeca*; ÖSTERGREN
 (202). *S. papposus*; MAR. BIOL. ASS. (184) p. 208): var. *squamata*
 is distinct sp.; ÖSTERGREN (202). *S. regularis*; MEISSNER (186)
 p. 17. *S. syrtensis* is valid sp.; ÖSTERGREN (202).
Solasterinae, defined, as Fam. with list of genera, also as Subfam.;
 DELAGE (54) p. 100.
 +*Sphaeraster*, history, *S. molassicus* n. sp., Helvetian, Suabia; SCHUETZE
 (251) p. 155, pl. ii. *S. punctatus*; SIEMIRADZKI (255) p. 139.
 +*Sphaerites* vide *Sphaeraster*.
Stegaster; DELAGE (54) p. 96.
Stellaster; op. cit. p. 91. *S. incei*; HERDMAN (120) p. 143.
 +*Stenaster salteri*; AMI (7) p. 61.
Stephanaster; DELAGE (54) p. 90.
Stichaster, descr.; op. cit. p. 102. *S. albulus*; MICHAÏLOVSKIÏ (192)
 p. 166. *S. arcticus*, syn. of *S. roseus*; ÖSTERGREN (202). *S. aurantiacus*;
 MEISSNER (186) p. 12. *S. nutrix*; loc. cit.; LUDWIG (164) p. 696. *S.*
roseus; KIAER (140).
Stichasterinae, defined, with list of genera; DELAGE (54) p. 102.
Styracaster; DELAGE (54) p. 89.
 +*Taeniaster* (?) *fournieri* n. sp., Visean, Belgium, placed in *Oph.*, but is
 perhaps *Ast.* [*Taeniaster* is an Ordovician Asteroid]; FRAIPONT (85)
 p. 7, pl. i.
Tarsaster; DELAGE (54) p. 103.
Thoracaster; DELAGE (54) p. 89.
Tremaster; DELAGE (54) p. 96.
Tylaster; DELAGE (54) p. 94.
Uniophora; DELAGE (54) p. 103.
Valvaster; DELAGE (54) p. 102.
Valvasterinae; DELAGE (54) p. 102.
Zoroaster, descr.; DELAGE (54) p. 102, fig.
Zoroasterinae, defined, with list of genera; loc. cit.

(E.)—OPHIUROIDEA.

Ophiuridia divided into Subclass 1. *Palophiuridiae* with Orders *Lysophiurida* & *Streptophiurida*, 2. *Colophiuridiae* with Orders *Zygophiurida* & *Cladophiurida*; DELAGE (54).
Amphilepis; op. cit. p. 153. *A. mobilis* n. sp., Timor & Java sea, 216—

- 330 m. ; KOEHLER (143) p. 94, pl. xx. *A. norvegica* ; GRIEG (106) p. 28. *A. protecta* **n. sp.**, G. of Boni, Celebes, 1158 m. ; KOEHLER (143) p. 94, pl. xxiii.
- Amphiodia*, vide sub *Amphiura*.
- Amphioplus*, vide sub *Amphiura*.
- Amphipholis*, vide etiam sub *Amphiura*. *A. squamata*, descr., range ; CLARK (38) p. 560, pls. vi, vii.
- Amphiura* descr. ; DELAGE (54) p. 152, figg. *A. sp.* ; HERDMAN (120) p. 146. *A. agitata* **n. sp.**, Sulu Archipel, 275 m. ; KOEHLER (143) p. 79, pl. xiii. *A. candida*, holotype & Marktanner's neotype redescri. ; KOEHLER (144) p. 66 & figg. *A. canescens* referred to *Ophiactis* (p. 96), *A. (Amphioplus) caulleryi* (p. 91) ; KOEHLER (143). *A. chiaji* ; GRIEG (106) p. 27 : MAR. BIOL. ASS. (184) p. 209 : ÖSTERGREN (204). *A. concinna*, Molucca sea, 2081 m. (p. 77, pl. xiii), *A. (Amphioplus) confinis*, G. of Boni, Celebes, 1158 m. (p. 89, pl. xiv), *A. (Amphiodia) crassa*, Macassar & Molucca sea, 450-2291 m. (p. 83, pl. xv), *A. (Amphioplus) debilis*, G. of Boni, Celebes, 1158 m. (p. 88, pl. xiv) : all **n. spp.** ; KOEHLER (143). *A. denticulata*, new to European waters, descr. ; GRIEG (106) p. 27. *A. (Amphiodia) diomedee* (p. 86), *A. duplicata* referred to *Ophiactis* (p. 96) ; KOEHLER (143). *A. elegans* ; NOBRE (198) p. 54, & (199) : MAR. BIOL. ASS. (184) p. 209. *A. filiformis* ; loc. cit. *A. (Amphioplus) firma* **n. sp.**, Gilolo passage, 411 m. (p. 87, pl. xii), *A. (Amphioplus) gentilis* **n. sp.**, Gilolo passage, 835 m. (p. 86, pl. xvi), *A. grandis* (p. 81), *A. (Amphiodia) grata* **n. sp.**, G. of Boni, Celebes, 1158 m. (p. 85, pls. xviii, xix), *A. hilaris* **n. sp.**, Macassar Str., 1301 m. (p. 80, pl. xv) ; KOEHLER (143). *A. integra*, a cotype redescri. ; KOEHLER (144) p. 65 & figg. *A. iris* (p. 81), *A. (Amphioplus) lorioli* (Koehl. sub *Ophiactis*) (p. 91, pl. xv) ; KOEHLER (143). *A. magellanica* ; LUDWIG (164) p. 694. *A. (Amphipholis) misera* (p. 83), *A. nociva* **n. sp.**, Banda sea, 204 m. (p. 78, pl. xv) ; KOEHLER (143). *A. ochroleuca*, holotype, is an *Amphiodia* not an *Amphipholis* (p. 63, figg.), *A. oerstedii*, holotype redescri. (p. 68, figg.), *A. olivacea*, a cotype descr. (p. 64, figg.) ; KOEHLER (144). *A. papillata*, vide sub *Ophiodoris*. *A. partita*, vide sub *Ophiactis*. *A. patagonica* ; LUDWIG (164) p. 694. *A. scripta* **n. sp.**, coast of Oman, Persian gulf, 4-6 fm. ; KOEHLER (144) p. 70 & figg. *A. securigera* ; GRIEG (106) p. 28. *A. (Amphiodia) servata*, Banda sea, 560 m. (p. 84, pl. xv), *A. (Amphioplus) spinulosa*, Flores Id., 247 m. (p. 92, pl. xvii) : **n. spp.** ; KOEHLER (143). *A. squamata* ; LUDWIG (164) p. 693. *A. sundevalli* ; GRIEG (106) p. 27 : individual without tentacle-scales ; MICHAÏLOVSKIÏ (192) p. 173. *A. (Amphioplus) tessellata*, Timor, 918 m. (p. 89, pl. xiii), *A. (Amphioplus) trepida*, Java sea, 289 m. (p. 93, pl. xiv), *A. uncinata*, Bima B. & Java sea, 250-330 m. (p. 76), *A. (Amphipholis) vitax*, Flores Id., 247 m. (p. 82, pl. xiii) : all **n. spp.** ; KOEHLER (143).
- Amphiuridae*, vide *Ophiodoris*.
- Amphiurinae* defined with list of genera ; DELAGE (54) p. 152.
- Astroceras* ; op. cit. p. 158. *A. compar* **n. sp.**, Banda sea, 204-304 m. (p. 158, pls. xxii, xxx, xxxii), *A. pergamena* (p. 159) ; KOEHLER (143).
- Astrocharis* **n. g.** of *Astro[s]chemidae*, with genotype *A. virgo* **n. sp.**, Sulu Archipel & Gilolo passage, 522-1089 m. ; KOEHLER (143) p. 160, pls. xx, xxx.
- Astrochele* ; DELAGE (54) p. 158.
- Astrochema* [sic passim ! pro *Astroschema*] ; KOEHLER (143).
- Astrocladus* ; DELAGE (54) p. 159.
- Astroclon* ; DELAGE (54) p. 158.
- Astrocnida* ; DELAGE (54) p. 158.
- Astrocreas* Verrill probably err. typ. pro *Astroceras* Lym. [this is so] ; DELAGE (54) p. 159.

- Astrodia* Verrill, 1899, probably err. typ. pro *Astrocnida*; loc. cit. [This is wrong: although not so stated by Verrill and therefore not so entered in Zool. Rec., *Astrodia* was **n. g.** of *Astronycidæ* first mentioned VERRILL (244) Zool. Rec. 1899, p. 74, first diagnosed VERRILL (341) Zool. Rec. 1900, p. 371.]
- Astrogeron*; DELAGE (54) p. 155.
- Astrogomphus*; op. cit. p. 158. *A. munitus* **n. sp.**, Gilolo passage, 1089 m.; KOEHLER (143) p. 157, pls. xxii, xxxii.
- Astronycidae*, vide *Astrodia*.
- Astronyx* (seu *Asteronyx*); DELAGE (54) p. 158. *A. loveni*; GRIEG (106) p. 33; KOEHLER (143) p. 167.
- Astrophisura* descr.; DELAGE (54) p. 159.
- Astrophyton*; loc. cit. *A. sculptum*, *A. verrucosum*; MARTENS (185).
- Astroporpa*; DELAGE (54) p. 157.
- Astroschema* descr.; loc. cit. *A. fastosum*, Minahassa, 1200 m. (p. 161, pls. xxviii, xxxii, xxxiii, xxxiv), *A. ferox*, Banda sea, 204 m. (p. 162, pls. xxxii, xxxiii), *A. migrator*, Macassar Str., 1301 m. (p. 164, pls. xxiv, xxx, xxxv): all **n. spp.**; KOEHLER (143).
- Astroschematidae*, vide *Astrocharis*.
- Astroscheminae*, defined with list of genera; DELAGE (54) p. 157.
- Astrotoma*; op. cit. p. 158. *A. bellator*, Sulu Archipel., 275 m. (p. 154, pls. xix, xxiii, xxviii), *A. vecors*, Banda sea & Timor, 204–520 m. (p. 155, pls. xxi, xxvii, xxxii): **n. spp.**; KOEHLER (143).
- Brachyophiuridae*, defined, with Famm. *Ophiiderm-*, *Ophiolepis-inae*; DELAGE (54) p. 148.
- Cladophiuridae*, defined with Famm. *Astroschem-*, *Trichaster-*, *Euryale-inae*; DELAGE (54) p. 157.
- Colophiuridae* defined; DELAGE (54) p. 144 & 147.
- Euryale*; op. cit. p. 159. *E. ludwigi*; MARTENS (185).
- Euryaleinae*, defined, with list of genera; DELAGE (54) p. 158.
- †*Geocoma*:—*G. carinata*, *G. planata*; WALTHER (281) p. 166.
- Gorgonocephalus* descr.; DELAGE (54) p. 158, fig. *G. agassizi*; GRIEG (106) p. 35: MICHAÏLOVSKIJ (192) p. 175: descr., range; CLARK (38) p. 561, pls. vi, vii. *G. arborescens*; NOBRE (199). *G. eucnemis*; GRIEG (106) p. 35 & (107) p. 4: MICHAÏLOVSKIJ (192) p. 174. *G. lamarcki* (p. 33), *G. lincki*, variations descr. (p. 35, fig.); GRIEG (106).
- Gymnolophus*; DELAGE (54) p. 157.
- Gymnophiura*; DELAGE (54) p. 149.
- Hemipholis*; op. cit. p. 153. *H. cordifera*; LUDWIG (164) p. 693.
- Luetkenia* Brock; DELAGE (54) p. 156: validity questioned, *L. cataphructa*, holotype; KOEHLER (144) p. 114, figg.
- †*Lysophiurida* defined; DELAGE (54) p. 145.
- Nectophiuridae*, defined, with Famm. *Amphiur-*, *Ophiohelus-*, *Ophiacant-*, *Ophiocom-*, *Ophiotrix-inae*; DELAGE (54) p. 152.
- Ophiacantha* descr.; op. cit. p. 154, figg.: Verrill's divisions reduced to subgenera; KOEHLER (143) p. 101. *O. abyssicola*; GRIEG (106) p. 31. *O. anomala*; LUDWIG (164) p. 694. *O. augusta* **n. sp.** Minahassa & Timor, circa 1200 m.; KOEHLER (143) p. 105, pl. xix. *O. bidentata*; GRIEG (106) p. 31: MICHAÏLOVSKIJ (192) p. 174. *O. clandestina* **n. sp.** Macassar Str., 655–724 m. (p. 108, pl. xix), *O. composita*, norm differs from holotype (p. 120, pl. xxiii), *O. congesta* **n. sp.**, Macassar & Gilolo passage, 450–798 m. (p. 103, pl. xxiv), *O. cosmica* (p. 108), *O. (Ophientodia) dilecta* **n. sp.**, Macassar Str. & Java sea, 724–794 m. (p. 117, pl. xxii), *O. duplex* (p. 109), *O. (Ophientodia) eximia* **n. sp.**, Malay Archipel., 724–1788 m. (p. 116, pl. xxi), *O. fausta* **n. sp.**, Banda sea, 304 m. (p. 104, pl. xx), *O. ficta* **n. sp.** ibid. 204 m., link w. *Ophiomitrella* (p. 121, pl. xvi); KOEHLER (143). *O. imago*; LUDWIG (164) p. 695. *O. (Ophiopristsis) imperita* **n. sp.** Arru Id., 1788 m. (p. 114,

- pl. xvii), *O. (Ophiotreta) inutilis* **n. sp.** Java & Banda sea, 238–397 m. (p. 111, pl. xxi), *O. (Ophiopristis) luctuosa* **n. sp.** Timor, 216 m. (p. 115, pl. xx); KOEHLER (143). *O. marsupialis*; LUDWIG (164) p. 695. *O. (Ophiectodia) matura* **n. sp.**, Banda sea, 797 m. (p. 112, pl. xxiii), *O. normanni* (p. 107), *O. pentagona* (p. 110), *O. (Ophiolimna) perfida* **n. sp.**, Malay Archipel., 411–959 m. (p. 118, pl. xxiii), *O. (Ophiopristis) procera* **n. sp.**, Banda sea, 595 m. (p. 113, pl. xxii), *O. relictæ* **n. sp.**, Malay Archipel., 538–1624 m. (p. 106, pl. xvii), *O. tenuis* **n. sp.**, Banda sea, 304 m. (p. 102, pl. xvi), *O. valenciennesi* (p. 110); KOEHLER (143). *O. vivipara*; LUDWIG (164) p. 694. *O. vorax*; KOEHLER (143) p. 109.
- Ophiacanthidae*, vide *Ophiomytis*.
- Ophiacantinae* defined with list of genera; DELAGE (54) p. 154.
- Ophiactis*; op. cit. p. 153. *O. abyssicola*; GRIEG (106) p. 29. *O. asperula*; LORIOL (162) p. 43; LUDWIG (164) p. 693. *O. balli*; MAR. BIOL. ASS. (184) p. 209: descr.; GRIEG (106) p. 29. *O. dissidens* **n. sp.** Macassar Str. 1301 m. (p. 98, pls. xvii, xviii), *O. flexuosa* var. *perplexa* Koehl. (olim sp.) (p. 95); KOEHLER (143). *O. kröyeri*; LUDWIG (164) p. 693. *O. lorioli* vide sub *Amphiura*. *O. modesta* (p. 63, figg.), *O. parata* **n. sp.**, Gilolo passage, 469 m. (p. 97, pl. xxiv), *O. partita* (Koehl. sub *Amphiura*), & young (p. 96); KOEHLER (143).
- Ophiambyx*; DELAGE (54) p. 153.
- Ophiarachna*; op. cit. p. 155. *O. affinis* cotypes, & a cotype of the syn. *O. clavigera* Brock, redescri.; KOEHLER (144) p. 76. *O. incrassata*; HERDMAN (120) p. 146.
- Ophiarthrum*; DELAGE (54) p. 155.
- Ophiarrhus*; op. cit. p. 150. *O. adspersus*; KOEHLER (143) p. 20.
- Ophioaethiops*; DELAGE (54) p. 156. *O. unicolor*; KOEHLER (144) p. 115 & figg.
- Ophioblenna*; DELAGE (54) p. 155.
- Ophiobyrsella erinaceus* **n. sp.**, Sulu Archipel., 275 m.; KOEHLER (143) p. 152, pl. xxvi.
- Ophiocamax*; DELAGE (54) p. 153 & figg. *O. rugosa* **n. sp.**, Malay Archipel., 204–520 m.; KOEHLER (143) p. 139, pl. xxvi.
- Ophiocampsis*; DELAGE (54) p. 156.
- Ophiocentrus*; DELAGE (54) p. 155.
- Ophioceramis*; op. cit. p. 150. *O. clausa*, vide *Ophiomoeris*. *O. declinans* **n. sp.**, Banda Sea, 204 m.; KOEHLER (143) p. 15, pl. iii. *O. januarii*; LORIOL (162) p. 44. *O. obstricta* & *O. tenera*, vide *Ophiomoeris*.
- Ophiochaeta*; DELAGE (54) p. 150.
- Ophiochiton*; op. cit. p. 153: spp. in two sections; KOEHLER (143) p. 68. *O. ambulator*, ? incl. *O. carinatus* Lüttk. & Mort. (p. 70), *O. bispinosus* **n. sp.**, Java Sea & Macassar Str., 538–655 m. (p. 71, pl. xi), *O. commixtus* **n. sp.**, Macassar Str., 1301 m. (p. 69, pl. xi), *O. inaequalis* **n. sp.**, Gilolo passage, 835 m. (p. 70, pl. xi); KOEHLER (143).
- Ophiochrysis* **n. g.** of *Ophiolepididae*, with genotype *O. ornata* **n. sp.**, Timor, 1224 m.; KOEHLER (143) p. 35, pl. vi.
- Ophiochytra*; DELAGE (54) p. 153.
- Ophiocirce* **n. g.** of *Ophiodermatidae*, with genotype *O. inutilis* **n. sp.**, Timor, 112 m.; KOEHLER (143) p. 13, pl. iii.
- Ophiocnemis*; DELAGE (54) p. 156. *O. marmorata*; HERDMAN (120) p. 146.
- Ophiocnida*; DELAGE (54) p. 153. *O. albo-viridis*, holotype descr.; KOEHLER (144) p. 71, figg. *O. brachiata*; MAR. BIOL. ASS. (184) p. 209.
- Ophiocoma* descr.; DELAGE (54) p. 155. *O. canaliculata*, holotype redescri.; KOEHLER (144) p. 75 & figg. *O. echinata*, section of ray figd.; ROY. COLL. SURGEONS (237) p. 2. *O. nigra*; MAR. BIOL. ASS. (184) p. 209: ÖSTERGREN (204) fig. *O. scolopendrina*; HERDMAN (120) p. 146.

- Ophiocominae* defined with list of genera; DELAGE (54) p. 155.
- Ophioconis*; op. cit. p. 149. *O. grandisquama* n. sp., Gilolo passage, 469 m.; KOEHLER (143) p. 11, pl. ii.
- Ophiocopa*; DELAGE (54) p. 155.
- Ophiocrates* n. g. of *Ophiolepididae* with genotype *O. lenta* n. sp., Macassar Str.; KOEHLER (143) p. 19, pl. iv.
- Ophiocreas*; DELAGE (54) p. 158. *O. oedipus* (p. 166), *O. sibogae* n. sp., Malay Archipel., 204–1089 m. (p. 165, pls. xxxii, xxxvi); KOEHLER (143).
- Ophiocrene*, ? young *Astrophyton*; DELAGE (54) p. 159.
- Ophiecten*; op. cit. p. 152, figg. *O. depressum*, vide *Ophiroleuce*. *O. sericeum*; MICHAILOVSKIJ (192) p. 173: cold water & warm water varr., latter = *Ophioglypha gracilis* Sars; GRIEG (106) p. 26.
- Ophiocymbium*; DELAGE (54) p. 155.
- Ophiodera neglecta* n. sp., Malay Archipel., 469–595 m.; KOEHLER (143) p. 153, pl. xxviii.
- Ophioderma*, descr.; DELAGE (54) p. 148 & fig. †*O. sp.*; BOEHM (28) p. 8, pl. i. *O. longicauda*; NOBRE (199).
- Ophidermatidae*, vide *Ophiocirce*, *Ophiopallas*.
- Ophiderminae*, defined with list of genera; DELAGE (54) p. 148.
- Ophiodoris* n. g. of *Amphiuridae* (p. 72), including *O. contrarius*, 1158–1301 m. (p. 75), *O. errans*, 595 m. (p. 74), *O. malignus*, 450 m. (p. 73), all n. spp., Malay Archipelago (pl. xii), & ? *Amphiura papillata* Lütik. & Mort.; KOEHLER (143).
- Ophiogeron*; DELAGE (54) p. 155.
- Ophiogona*; DELAGE (54) p. 149.
- Ophioglypha*, classification of spp. discussed, two divisions suggested according as second buccal pores open into mouth or not (p. 36), *O. aequalis* (p. 55); KOEHLER (143). *O. albida*; KIAER (140). *O. clemens* n. sp., Malay Archipel., 694–1633 m. (p. 51, pl. viii), *O. distincta* n. sp., Timor & Java sea, 216–794 m. (p. 44, pl. ix), *O. flagellata* (p. 56); KOEHLER (143). *O. hexactis*; LUDWIG (164) p. 692. *O. humilis* n. sp., Sulu Archipel., 120–400 m. (p. 39, pl. vii), *O. imbecillis* (p. 40), *O. improba* n. sp., Banda sea, 1595 m. (p. 48, pl. viii); KOEHLER (143). *O. indica*, a cotype redescri.; KOEHLER (144) p. 61, figg. *O. inornata*, incl. *O. divisa*, variations (p. 40), *O. insolita* n. sp., Banda sea & Gilolo, 204–397 m. (p. 47, pl. vii); KOEHLER (143). *O. lacertosa*; KIAER (140): NOBRE (199): UEXKUELL (274). *O. latro* n. sp., Banda sea, 204 m. (p. 41, pl. ix), *O. laudata* n. sp., Sulu Archipel., 450 m. (p. 43, pl. viii), *O. lenta* n. sp., Malay Archipelago (p. 53, pl. viii), *O. liberata* n. sp., Gilolo passage, 835 m. (p. 46, pl. vii), *O. prisca* n. sp., Banda sea, 1595 m. (p. 38, pl. vi), *O. radiata* (p. 55), *O. remota* n. sp., Flores sea, 2798 m. (p. 54, pl. ix); KOEHLER (143). *O. robusta*, descr., range; CLARK (38) p. 558, pls. vi, vii. †*O. sarsi*?; MADSEN (177) p. 530. *O. solida* (p. 43, pl. viii), *O. sordida* (p. 47), *O. urbana* n. sp., Gilolo passage, 469 m. (p. 50, pl. vii); KOEHLER (143).
- Ophiogymna*; DELAGE (54) p. 156.
- Ophiohelix*; op. cit. p. 157: syn. of *Ophioaethiops*; KOEHLER (144) p. 115.
- Ophiohelus* descr.; DELAGE (54) p. 153, figg.
- Ophiohelusinae* defined with list of genera; loc. cit.
- Ophiotebes*; DELAGE (54) p. 155.
- Ophiolepididae*, vide *Ophiochrysis*, *Ophiocrates*, *Ophiroleuce*, *Ophiomidas*, *Ophiomoeris*.
- Ophiotepis*; op. cit. p. 149. †*O. leckenbyi*, †*O. murrayi*; STRANGWAYS (266) p. 15.
- Ophiotepisinae*, defined with list of genera; DELAGE (54) p. 149.
- Ophiroleuce* n. g. of *Ophiolepididae* (p. 32) for *Ophiecten depressum* Lym., & *O. seminudum* n. sp., Sulu Archipel. & Ceram, 120–1633 m.; KOEHLER (143) p. 33, pl. ii.

- Ophiolipus* (seu *-lypus*); DELAGE (54) p. 150. *O. granulatus* (p. 21), *O. levis* **n. sp.**, Gilolo passage, 469–835 m. (p. 21, pl. iv); KOEHLER (143).
- Ophiolophus*; DELAGE (54) p. 156. *O. novarae*, holotype redescri.; KOEHLER (144) p. 117 & figg.
- Ophiomastix*; DELAGE (54) p. 155. *O. venosa*, topotype descr.; KOEHLER (144) p. 73, figg.
- Ophiomastus*; DELAGE (54) p. 152, figg. *O. perplexus* **n. sp.**, G. of Boni & Timor, 828–1158 m. (p. 29, pl. iii), *O. tumidus* (p. 30); KOEHLER (143).
- Ophiomaza*; DELAGE (54) p. 156. *O. cacaotica*; HERDMAN (120) p. 147.
- Ophiomidas* **n. g.** of *Ophiolepididae* (p. 26) for *O. alatum*, Macassar Str., 1301 m. (p. 26, pl. v) & *O. reductum*, near Simbawa Id., 2060 m. (p. 27, pl. v), **n. spp.**, also *Ophiozona dubia* (p. 28); KOEHLER (143).
- Ophiomitra*; DELAGE (54) p. 154: Verrill's division into *Ophiomitra*, *Ophioplinthaca*, & *Ophiomitrella*, accepted; KOEHLER (143) p. 122.
- Ophiomitrella* rediagnosed (p. 123), *O. barbara*, Banda sea, 310 m. (p. 133, pls. xxvi, xxvii), *O. languida*, Macassar, 450 m. (p. 135, pl. xxix), *O. moniliformis*, Molucca sea, 2081 m. (p. 136, pl. xxvii), *O. mutata*, Banda sea, 204–304 m. (p. 134, pl. xxx), *O. placida*, Timor & Banda sea, 204–304 m. (p. 137, pl. xxxi): all **n. spp.**; KOEHLER (143).
- Ophiomoeris* **n. g.** of *Ophiolepididae* (p. 16), with genotype *O. spinosa* **n. sp.**, Sulu and Banda seas, 204–1901 m. (p. 17, pl. iv), also *Ophioceramis clausa*, *obstricta*, and *tenera*; KOEHLER (143).
- Ophiomusium*; DELAGE (54) p. 150, fig. *O. altum* **n. sp.**, Macassar Str., 2029 m. (p. 57, pl. x), *O. elegans*, discussed (p. 66), *O. fallax* **n. sp.**, Gilolo passage, 469 m. (p. 56, pls. ix, x); KOEHLER (143). + *O. ferrugineum*, redescri.; LEUTHARDT (152) p. 110, pl. ii. *O. impurum* **n. sp.**, Banda sea, 120–400 m. (p. 64, pl. x), *O. lunare*, *O. lymani* (p. 58), *O. properum* **n. sp.**, N. of Sumbawa & Macassar Str., 695–724 m. (p. 62, pl. x), *O. relictum* **n. sp.**, Gilolo passage, 469 m. (p. 61, pl. x), *O. sanctum* **n. sp.**, Molo Str. and Timor, 54–216 m. (p. 59, pl. xi), *O. scalare*, discussed (p. 65), *O. serratum* (p. 66), *O. validum*, and young, compared with *O. lunare* (p. 59); KOEHLER (143).
- Ophiomyces*; DELAGE (54) p. 153. *O. delata* **n. sp.**, Sulu Archipel. and Banda sea, 350–4239 m.; KOEHLER (143) p. 100, pls. xvii, xviii.
- Ophiomytis* **n. g.** of *Ophiucanthidae*, with genotype *O. weberi* **n. sp.**, Timor, 520 m.; KOEHLER (143) p. 142, pl. xviii.
- Ophiomyxa*, descr.; DELAGE (54) p. 146 & fig. *O. ? juv.*; HERDMAN (120) p. 147. *O. brevispina*; MARTENS (185). *O. vivipara*; LUDWIG (164) p. 695.
- Ophioncus*; DELAGE (54) p. 148.
- Ophionema*; DELAGE (54) p. 155.
- Ophioneptlys*; DELAGE (54) p. 155.
- Ophionereis*; op. cit. p. 153. *O. ? sp.*; HERDMAN (120) p. 146. *O. fusca*, a cotype; KOEHLER (144) p. 72 & figg.
- Ophiopaepale*; DELAGE (54) p. 150. *O. goesiana*, holotype redescri.; KOEHLER (144) p. 57 & figg.
- Ophiopallas* **n. g.** of *Ophiodermatidae*, with genotype *O. paradoxa* **n. sp.**, Macassar, Gilolo Passage, and Banda sea, 204–450 m.; KOEHLER (143) p. 12, pl. iii.
- Ophiopeza*; DELAGE (54) p. 149. *O. aequalis* (p. 10), *O. custos*, referred to *Ophioplax* (p. 67); KOEHLER (143).
- Ophiopezella*; DELAGE (54) p. 149.
- Ophiopholis*; op. cit. p. 153. *O. aculeata*; GRIEG (106) p. 30: KIAER (140): MICHAILOVSKIJ (192) p. 173: ÖSTERGREN (204): descr., range; CLARK (38) p. 559, pls. v, vii.
- Ophiophragmus*; DELAGE (54) p. 153.
- Ophiophthirius*; DELAGE (54) p. 157.

- Ophiophyllum* ; DELAGE (54) p. 150 & figg.
Ophiopanax ; DELAGE (54) p. 149.
Ophioplax ; op. cit. p. 153. *O. custos* (Koehl. sub *Ophiopeza*) discussed ; KOEHLER (143) p. 67.
Ophiopleura ; DELAGE (54) p. 150. *O. aurantiaca*, descr., compared with *O. borealis* ; GRIEG (106) p. 17 & fig. *O. borealis* ; op. cit. p. 15 : MICHAÏLOVSKIJ (192) p. 171.
Ophioplinthaca, diagnosis (p. 123), *O. chelys* (p. 131), *O. citata* **n. sp.**, Banda sea and Gilolo Passage, 204-469 m. (p. 130, pl. xxiv), *O. miranda* **n. sp.**, Banda sea, 984 m. (p. 123, pl. xxxi), *O. mitis* **n. sp.**, ibid., 204-304 m. (p. 127, pl. xxv), *O. pulchra* **n. sp.**, Malay Archipel., 304-522 m. (p. 125, pl. xxvii), *O. rudis* (Koehl. sub *Ophiomitra*) (p. 132), *O. vicina* **n. sp.**, Banda sea, 1595 m. (p. 129, pl. xxv) ; KOEHLER (143).
Ophioplinthus ; DELAGE (54) p. 150.
Ophioplocus ; DELAGE (54) p. 150.
Ophiopsammium ; DELAGE (54) p. 156.
Ophiopsila ; op. cit. p. 153. *O. aranea* ; MAR. BIOL. ASS. (184) p. 209.
Ophiopteris ; DELAGE (54) p. 155.
Ophiopteron ; op. cit. p. 156, figg. *O. elegans* ; HERDMAN (120) p. 147 : wide distrib. ; BELL in op. cit. p. 148.
Ophiopus ; DELAGE (54) p. 153. *O. arcticus* ; GRIEG (106) p. 30.
Ophiopyren ; DELAGE (54) p. 149, fig. *O. delatum* **n. sp.**, Java sea, 538 m. ; KOEHLER (143) p. 10, pl. iii.
Ophiopyrgus ; DELAGE (54) p. 150, figg. *O. depressus*, Macassar Str., 2029 m. (p. 31, pl. iv), *O. trispinosus*, Malay Archipelago, 120-1914 m. (p. 30, pl. v) : **n. spp.** ; KOEHLER (143).
Ophioscisma ; DELAGE (54) p. 155.
Ophioscolex ; loc. cit. *O. glacialis* ; GRIEG (106) p. 32 : slight variations ; MICHAÏLOVSKIJ (192) p. 174. *O. pertinax* **n. sp.**, Banda sea, 404 m. ; KOEHLER (143) p. 145, pl. xxv. *O. purpureus* ; GRIEG (106) p. 32.
Ophiosphaera ; DELAGE (54) p. 157 : systematic position uncertain (p. 117), *O. insignis*, a cotype descr. (p. 116, figg.) ; KOEHLER (144).
Ophiostigma ; DELAGE (54) p. 153.
Ophiothamnus ; op. cit. p. 154. *O. stultus* **n. sp.**, Malay Archipel., 794-1158 m. ; KOEHLER (143) p. 141, pls. xxv, xxvi.
Ophiothela ; DELAGE (54) p. 156.
Ophiotholia ; op. cit. p. 153. *O. multispina* **n. sp.**, Malay Archipel., 216-567 m. ; KOEHLER (143) p. 99, pl. xxxiii.
Ophiothrichoides ; DELAGE (54) p. 156.
Ophiothrix, descr. ; op. cit. p. 155, figg. : variability ; BELL in HERDMAN (120) p. 150. *O. aristulata* ; KOEHLER (143) p. 151. *O. ? aspidota* ; HERDMAN (120) p. 146 : holotype redescri., also specimen fr. Ceylon, Brock's specimen referred to *O. bedoti* ; KOEHLER (144) p. 87, figg. *O. capillaris*, variations ; KOEHLER (143) p. 151. *O. carinata*, a cotype redescri. (p. 90, figg.), *O. ciliaris*, cotypes redescri. (p. 100, figg.) ; KOEHLER (144). *O. clarescens* **n. sp.**, Banda sea, 304 m. ; KOEHLER (143) p. 150, pls. xxix, xxx. *O. comata*, holotype redescri., distinguished fr. specimens so named by Marktanner, de Loriol, & Koehler ; KOEHLER (144) p. 105, figg. *O. crassispina*, Sumbawa Id., 274 m. (p. 147, pls. xxviii-xxx), *O. deposita*, Malay Archipel., 204-520 m. (p. 146, pl. xxix) : **n. spp.** ; KOEHLER (143). *O. elegans*, holotype redescri. ; KOEHLER (144) p. 110 & figg. *O. fragilis* ; GRIEG (106) p. 32 : KIAER (140) : MACBRIDE (172) : MALARD (179) p. 192 : MAR. BIOL. ASS. (184) p. 210 : NOBRE (198) p. 54, & (199) : RETZIUS (226) p. 27 : ZIEGLER (298). *O. fumaria*, holotype redescri. (p. 77 & figg.), *O. marenzelleri* **n. sp.**, Japan, referred to *O. stelligera* by Marktanner (p. 103, figg.), *O. merguiensis*, holotype distinguished fr. *O. ciliaris* (p. 102) ; KOEHLER (144). *O. ? nereidina* ; HERDMAN (120) p. 146.

- O. picteti*, holotype compared with Brock's *O. foveolata*, which is syn. (p. 110), *O. proteus* n. sp., based on *O. comata* Koehler, 'Investigator' coll. (p. 109), *O. roseo-coerulans*, cotypes redescri. (p. 97, figg.), *O. smaragdina*, a cotype redescri. (p. 92, figg.), *O. spongicola*, redescri. (p. 95, figg.), *O. stabilis* n. sp., S. E. Japan (p. 84, figg.), *O. tenera*, holotype redescri. (p. 113, figg.), *O. triglochis*, redescri. (p. 81, figg.); KOEHLER (144). *O. viator* n. sp., Banda sea, 304 m.; KOEHLER (143) p. 148, pl. xxxi. *O. virgata*, Brock's specimen descri.; KOEHLER (144) p. 80 & fig.
- Ophiothyreus*; DELAGE (54) p. 150. *O. goesii*, cotypes redescri.; KOEHLER (144) p. 59 & figg.
- Ophiotoma*; DELAGE (54) p. 155. *O. assimilis* n. sp., Ceram & Timor, 567-918 m.; KOEHLER (143) p. 144, pl. xxviii.
- Ophiotrema*; DELAGE (54) p. 155.
- Ophiotriaxinae*, defined with list of genera; DELAGE (54) p. 155.
- Ophiotrochus*; op. cit. p. 150. *O. panniculus*; KOEHLER (143) p. 15.
- Ophiotypa*; DELAGE (54) p. 152.
- Ophiozona*; op. cit. p. 150, fig.: content discussed (p. 25), *O. casta* n. sp., Banda sea, 560 m. (p. 22, pls. v, vi), *O. depressa* n. var. *media*, N. Celebes & Timor, 918-1264 m. (p. 24, pl. iv); KOEHLER (143). *O. dubia*, vide *Ophiomidas*. *O. molesta* n. sp., Sulu Archipel., 1270 m.; KOEHLER (143) p. 23, pl. vi.
- Ophiura*, descri.; DELAGE (54) p. 149, figg. *O. sp.*; HERDMAN (120) p. 146: RETZIUS (226) p. 27: † ROWE (235) p. 293. *O. albida*; GRIEG (106) p. 21: MALARD (179) p. 192: MAR. BIOL. ASS. (184) p. 208: ÖSTERGREN (204). *O. brevispina*, descri., range; CLARK (38) p. 558, pls. v, vii. *O. ciliaris*; GRIEG (106) p. 21: MAR. BIOL. ASS. (184) p. 208: NOBRE (199). *O. divisa*, syn. of *O. inornata*; KOEHLER (143) p. 4, 41. *O. nodosa*; GRIEG (106) p. 26: MICHAILOVSKIJ (191) & (192) p. 173. *O. robusta*; GRIEG (106) p. 26: MICHAILOVSKIJ (192) p. 172. *O. sarsi*; loc. cit.: a cold area var.; GRIEG (106) p. 21.
- † *Ophiurella speciosa*; WALTHER (281) p. 166.
- Ophiurina*?; BATHER in FOX (84) p. 752 [proves to be a new genus, 1905].
- Ophiuropsis*; DELAGE (54) p. 158.
- † *Palophiuridae*, descri.; DELAGE (54) p. 144 et sq.
- Pamamphiura*; DELAGE (54) p. 152.
- Pectinura*; op. cit. p. 149. *P. conspicua*; KOEHLER (143) p. 9, pl. i. *P. gorgonia*; HERDMAN (120) p. 146. *P. heros* (p. 9), *P. honorata* n. sp., Banda sea, 304 m. (p. 8, pl. ii); KOEHLER (143). *P. intermedia*; HERDMAN (120) p. 146. *P. modesta* n. sp., Java sea, 330 m.; KOEHLER (143) p. 7, pl. ii.
- † *Protaster*, descri.; DELAGE (54) p. 146.
- Sthenocephalus*; DELAGE (54) p. 159.
- Streptophiurida*, defined; DELAGE (54) p. 145 & 146.
- Trichaster*, descri.; DELAGE (54) p. 158 & figg.
- Trichasterinae*, defined, with list of genera; loc. cit.
- Zygophiurida*, divided into Suborders *Brachy-*, and *Nect-ophiuridae*; DELAGE (54) p. 148.

(F.) CRINOIDEA*.

- Diagnosis of class; HAMANN (112) p. 1415. *Crinoidia*, defined and classified in Orders, 1. *Larviformida*, 2. *Fistulida*, 3. *Camerida*, 4. *Articulida*; DELAGE (54) p. 375.
- † *Acrocrinus*; DELAGE (54) p. 383, fig.

* Names that are sometimes given the termination *-ites* (e.g. *Pentacrinites*) are here treated as always ending in *-us*.

- †*Actinocrinus* descr. ; op. cit. p. 385. *A. multiramosus* n. var. *altidorsatus*, Keokuk, Washington co. Ind. ; ROWLEY in GREENE (105) p. 187, pl. lvii.
- †*Actinocrinusinae*, defined with list of genera ; DELAGE (54) p. 385.
- Actinometra* ; op. cit. p. 395, fig. *A. multiradiata*, syzygies (p. 157), *A. notata*, variations from type (p. 157), *A. parvicirra*, variations from type (p. 158, pl.) ; CHADWICK (35).
- †*Aesiocrinus* ; SCHUCHERT (247) pl. ci.
- †*Allagecrinus* ; DELAGE (54) p. 377.
- †*Allegecrinusinae*, defined, with list of genera ; loc. cit.
- †*Ancyrocrinus* ; JAEKEL (132). *A. bulbosus* ; CLARKE & LUTHER (40) p. 52.
- Antedon* descr. ; DELAGE (54) p. 339, 394, figg. ; SCHUETZE (251) p. 157.
- A. anceps* ; CHADWICK (35) p. 157. *A. barentsi* vide *A. eschrichti*. *A. bella* & var. *brunnea* ; CHADWICK (35) p. 155. *A. bifida* ; MAR. BIOL. ASS. (184) p. 207 : NOBRE (198) p. 52 : measurements ; GRIEG (107) p. 23, fig. : v. etiam *A. rosacea*. *A. carinata* ; CHADWICK (35) p. 154. *A. celtica* vide *A. eschrichti*. *A. eschrichti* incl. *A. celtica*, *quadrata*, *barentsi*, fixed stage, measurements ; GRIEG (107) p. 13, 23 : incl. *A. barentsi*, local variations ; MICHAÏLOVSKIÏ (192) p. 175. †*A. formosus* ; WALTHER (281) p. 165. *A. hirsuta* ; ANDERSSON (10). *A. indica*, *A. marginata*, *A. milberti*, syzygies (p. 154), *A. okelli* n. sp. of *Palmata* group, W. coast Ceylon & G. of Manaar, 8-36 fm. (p. 155, pl.) ; CHADWICK (35). *A. petasus*, measurements (p. 23, fig.), *A. phalngium* (p. 6, 23) ; GRIEG (107). †*A. pinnatus* ; WALTHER (281) p. 158, 165. *A. proluxa* ; MICHAÏLOVSKIÏ (192) p. 176 : measurements, comparison with *A. tenella* et al., cirrals, syzygies, genital pinnules ; GRIEG (107) p. 20, 22, & fig. *A. quadrata*, provisionally kept distinct from *A. eschrichti* (q. v.) ; MICHAÏLOVSKIÏ (192) p. 176. *A. reynaudi*, redescrip. ; CHADWICK (35) p. 156, pl. †*A. rhodanicus*, Suabia, comparative measurements ; SCHUETZE (251) p. 156, pl. ii. *A. rosacea* ; LUDWIG (164) p. 699 : v. etiam *A. bifida*. *A. serripinna*, Ceylon, variations from type ; CHADWICK (35) p. 153, pl. *A. tenella*, measurements, v. sub *proluxe*, fixed stage ; GRIEG (107) p. 20, 22 & fig. *A. variipinna* ; CHADWICK (35) p. 157.
- Antedoninae* defined, with list of genera ; DELAGE (54) p. 394.
- †*Aorocrinus* :—*A. cauliculus*, *A. pocillum*, *A. praecursor* ; CLARKE & LUTHER (40) p. 52.
- †*Apiocrinus* :—*A. milleri* ; SIEMIRADZKI (255) p. 139. *A. munsterianus*, *A. polycyphus* ; MAIRE (178). *A. rosaceus* ? ; ROLLIER (230) p. 464.
- †*Apiocrinusinae*, defined, with list of genera ; DELAGE (54) p. 390.
- †*Arachnoocrinus extensus*, divergences from type, which came as this from Upper Helderberg ; ROWLEY in GREENE (104) p. 180, 184, pl. liv.
- †*Archaeocrinus* ; DELAGE (54) p. 386, fig. *A. desideratus* (p. 63), *A. microbasalis* (p. 62), *A. pyriformis* (p. 61, 62, 63) ; AMI (7).
- †*Arthracaantha punctobrachiata*, arms ; WOOD (291) p. 81, pl. xvi.
- Articulida*, Order, defined (p. 376) descr. & divided into Suborders 1. *Flexibilidae*, 2. *Canaliculidae* (p. 387) ; DELAGE (54).
- †*Austinocrinus meyeri*, *rothpletzi*, *zitteli* may all be from one sp. of *Isocr.* ; JAEKEL (133).
- †*Balanocrinus*, vide sub *Pentacrinus*.
- †*Barrandeocrinus* ; DELAGE (54) p. 384, fig.
- †*Barycrinus hoveyi* ; WHITFIELD (286) pls.
- Bathycrinus* discussed ; DELAGE (54) p. 391, figg. *B. carpenteri*, measurements, stem, basals, union of Br. ; GRIEG (107) p. 8.
- †*Batocrinus* descr. ; DELAGE (54) p. 384, fig. *B. crassitestus* n. sp., Warsaw Limest., Lanesville, Ind. (p. 172, pl. li), *B. danisi*, redescrip. with n. varr. *lanesvillensis* et *sculptus* ; ibid. (p. 171, 172, 174, pl. li),

- B. icosidactylus*, redescri. (p. 173, 174, pl. li), *B. irregularis*, redescri. (p. 171, pl. li), *B. magnirostris* **n. sp.**, Warsaw Limest., Lanesville, Ind. (p. 170, pl. li); ROWLEY in GREENE (103). *B. spergenensis*; ROWLEY in GREENE (105) p. 188, pl. lvii.
- +*Batocrinusinae*, defined with list of genera; DELAGE (54) p. 384.
- +*Botryocrinus americanus* **n. sp.**, Hamilton group, Charlestown, Ind.; ROWLEY in GREENE (104) p. 184, pl. liv.
- +*Bourgueticrinus*:—*B. sp.*, dwarf; ROWE (235) p. 256, 266, 293. *B. sp.* (nipple-headed); DIBLEY (62). *B. ellipticus*; COLLET (44) p. 77: HINDE (125): TÜRNEBOHM (267) p. 143.
- +*Cainocrinus andreae* vide sub *Pentacrinus*.
- Calamocrinus* descr.; DELAGE (54) p. 390, figg.
- +*Calceocrinus*; op. cit.; DELAGE (54) p. 379, fig. *C. alleni* **n. sp.**, Clinton group, Pike co., Mo.; ROWLEY (236) p. 275, pl. xvi. *C. clarus*; CLARKE & LUTHER (40) p. 55.
- +*Calceocrinusinae*, defined with list of genera; DELAGE (54) p. 379.
- +*Callicrinus*; DELAGE (54) p. 384, fig.
- +*Camarocrinus* (et err. *Cameroocr.*), syn. *Lobolithus*; FRIČ (88): JAEKEL (132): history of opinion, mode of occurrence in America and Bohemia, diagnosis, incl. *Lobolithus* but not *Scyphocr.*, believed to be a float (p. 253–269), *C. saffordi*, descr. (p. 270, pl. xl), *C. stellatus*, descr. (p. 269, pl. xlv), *C. ulrichi*, descr. (p. 271, pls. xli–xliii) with **n. var. stellifer**, Lower Helderberg (p. 272, pls. xl, xli); SCHUCHERT (249).
- +*Camerida*, Order, defined (p. 376) descr. (p. 382) with Famm. *Platycrinus*-, *Glyptocrinus*-, *Batocrinus*-, *Actinocrinus*-, *Rhipidocrinusinae*; DELAGE (54).
- Canaliculidae*, Sub-Order, defined (p. 388) with Famm. *Encrinus*-, *Uintacrinus*-, *Apiocrinus*-, *Rhizocrinus*-, *Holopus*-, *Saccocom*-, *Pentacrinus*-, *Antedoninae* (p. 389); DELAGE (54).
- +*Catillocrinus*; DELAGE (54) p. 379.
- +*Catillocrinusinae*, defined, with list of genera; loc. cit.
- +*Cleioocrinus grandis*; AMI (7) p. 63.
- +*Coccocrinus*; DELAGE (54) p. 377.
- +*Compsoocrinus*; DELAGE (54) p. 384, fig.
- +*Cordylocrinus? dubius* **n. sp.**, Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 272, pl. xvi.
- +*Cothocrinus*; DELAGE (54) p. 392.
- +*Cotylederma* sp.; SCHAEFER (242) p. 34.
- +*Crotalocrinus*; DELAGE (54) p. 380, figg.
- +*Cupressocrinus*; DELAGE (54) p. 380, fig.
- +*Cyathidium holopus*, habitat; HENNIG (115) p. 55: RAVN (223) p. 351: TÜRNEBOHM (267) p. 143.
- +*Cyathocrinus* descr.; DELAGE (54) p. 379, fig. *C. bulbosus*; CLARKE & LUTHER (40) p. 43. *C.? ovalis* **n. sp.**, “almost certainly not *Cyathocr.*”, Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 271, pl. xvi. *C. ramosus?*; KITTL (141) p. 686.
- +*Cyathocrinusinae*, defined with list of genera; DELAGE (54) p. 379.
- +*Dadocrinus gracilis*; KITTL (141) p. 539.
- +*Decadocrinus*; DELAGE (54) p. 381, fig.
- +*Dendrocrinus* descr.; DELAGE (54) p. 380. *D. acutidactylus*, *D. congregatus*, *D. conjugans*; AMI (7) p. 62.
- +*Dendrocrinusinae*, defined with list of genera; DELAGE (54) p. 380.
- +*Dimerocrinus* [fig. 479, showing dorsal nerve-cords is not this genus but *Encrinus*, belonging to a different Order]; op. cit. p. 386.
- +*Dolatocrinus*, small value of arm-branching in classification (p. 69), *D. sp.* (p. 73, fig.), *D. amplus* (p. 78), *D. asterias* **n. sp.**, Devonian, Upper Traverse Limest., Michigan, & abnormality (p. 71, pl. xvi), *D. caelatus* (p. 77), *D. charlestownensis* (p. 74), *D. costatus* **n. sp.**, Devonian,

Mid. Traverse Limest., Michigan (p. 70, pl. xvi); WOOD (291). *D. excavatus*; op. cit. p. 78: variations in IBr.; ROWLEY in GREENE (105) p. 191, pl. lvii. *D. glyptus*; CLARKE & LUTHER (40) p. 49, 52; WOOD (291) p. 76. *D. grandis* (p. 79), *D. greenei*, discussed (p. 74), *D. hammelli* (p. 75), *D. indianensis* (p. 77); WOOD (291). *D. intermedius*; CLARKE & LUTHER (40) p. 52. *D. lacus*; WOOD (291) p. 73. *D. liratus*; CLARKE & LUTHER (40) p. 49, 52. *D. major* (p. 76), *D. ornatus*, distinguished from *D. glyptus* (p. 76), *D. pulchellus* (p. 79), *D. salebrosus*, variation (p. 78); WOOD (291). *D. triadactylus*; GRABAU (102A) p. 193, 194: incl. *D. aplatus*; WOOD (291) p. 74. *D. troosti*; CLARKE & LUTHER (40) p. 52. *D. venustus* (p. 79), *D. wachsmuthi* **nom. nov.** pro *D. lyoni* W. & Sp. non Mill. & Gurl. (p. 77); WOOD (291).

†*Edriocrinus pyramidalis*; CLARKE & LUTHER (40) p. 43.

†*Encrinurus* descr. [vide sub *Dimerocr.*]; DELAGE (54) p. 389. *E. cassianus*; FIEDLER (77): KITTL (141) p. 703 & cf. *cassianus*, p. 645. *E. granulatus*; op. cit. p. 579, 703, & cf. *granulosus*, p. 576. *E. liliiformis*; LANGENHAN (150): ZLATARSKI (299). *E. cf. moniliformis*; DEL CAMPANA (56) p. 554. *E. silesiacus*; ZLATARSKI (299).

†*Encrinurinae* defined with list of genera; DELAGE (54) p. 389.

†*Erisocrinus* sp.; BEEDE & ROGERS (21).

†*Eugeniocrinus*; DELAGE (54) p. 392, fig. *E. hoferi*; MAIRE (178).

†*Euspirocrinus*; DELAGE (54) p. 380.

Fistulida, Order, defined (p. 375), descr. (p. 377) with Famm. *Hyboocrinus*-, *Heterocrinus*-, *Calceocrinus*-, *Catilloocrinus*-, *Cyathocrinus*-, *Dendrocrinus*-, *inac*; DELAGE (54).

†*Flexibilidae*, Suborder, defined with Famm. *Ithyocrinus*-, *Marsupites*-, *inac*; DELAGE (54) p. 388.

†*Forbesocrinus*:—*F.* sp.; PEACH (209) p. 850. *F. lobatus*; CLARKE & LUTHER (40) p. 55.

Gasterocomidae, vide *Tripleurocrinus*.

†*Gemmaocrinus*:—*G. carinatus*; WOOD (291) p. 80. *G. eucharis*; CLARKE & LUTHER (40) p. 52. *G. kentuckiensis*, extra IBr.; WOOD (291) p. 80 & fig. *G. nyssa*; CLARKE & LUTHER (40) p. 52. *G. simulans* **n. sp.**, Hamilton group, Charlestown, Ind.; ROWLEY in GREENE (104) p. 183, pl. liv.

Gephyrocrinus; DELAGE (54) p. 393.

†*Gilbertocrinus*; op. cit. p. 386, fig. *G. indianensis*; WOOD (291) p. 81. *G. spinigerus*; CLARKE & LUTHER (40) p. 52.

†*Gissocrinus? problematicus* **n. sp.**, Clinton group, Louisiana, Mo.; ROWLEY (236) p. 277, pl. xvi.

†*Glyptocrinus*; DELAGE (54) p. 383. *G. insperatus* **n. sp.** (p. 275) & **n. varr. pentagonus** (p. 276), *carinatus* (p. 278), Clinton group, Pike co., Mo.; ROWLEY (236) pl. xvi. *G. cf. priscus* (p. 71), *G. ramulosus* (p. 61, 62); AMI (7).

†*Glyptocrinusinae* defined with list of genera; DELAGE (54) p. 383.

†*Haploocrinus* descr.; DELAGE (54) p. 377, figg.

†*Haploocrinusinae* defined; DELAGE (54) p. 377.

†*Herpetocrinus* [fig. 450 "*Bras de H. fletcheri*" is really a view of the whole animal]; DELAGE (54) p. 379.

†*Heterocrinus*; DELAGE (54) p. 379. *H. simplex canadensis*; AMI (7) p. 64.

†*Heterocrinusinae* defined with list of genera; DELAGE (54) p. 379.

Holopus descr.; op. cit. p. 392, figg. *H. rangi*, habitat; HENNIG (115) p. 57.

†*Holopusinae* defined with list of genera; DELAGE (54) p. 392.

†*Hyboocrinus* descr.; DELAGE (54) p. 378.

†*Hyboocrinusinae* defined with list of genera; loc. cit.

†*Hydreionocrinus globularis*; PEACH (209) p. 850.

Hyocrinus descr.; DELAGE (54) p. 392.

Hyocrinusinae defined with list of genera; loc. cit.

+*Hystericrinus depressus*; CLARKE & LUTHER (40) p. 65.

+*Ichthyocrinus*; DELAGE (54) p. 388.

+*Ichthyocrinusinae* defined with list of genera; loc. cit.

+*Iocrinus subcrassus*; AMI (7) p. 65.

Isocrinus vide sub *Pentacrinus*.

+*Lampetrocrinus? comptus* n. sp., detached plates, Clinton group, Louisiana, Mo.; ROWLEY (236) p. 279, pl. xvi.

+*Larviformida*, Order, defined (p. 375) with Fam. *Haplocrinus*-, *Allagecrinus*-, & *Stephanocrinus*-inae (p. 377); DELAGE (54).

+*Lecanocrinus hemisphericus* n. sp., Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 271, pl. xvi.

+*Lichenocrinus*; JAEKEL (132). *L. crateriformis*; AMI (7) p. 65.

Lobolithus (vide etiam *Camarocr.*), *L. sp.*; FRIČ (88): Probably a nodule; PERNER in Abstract.

+*Mariacrinus*; DELAGE (54) p. 383 & fig.

+*Marsupites*; JAEKEL (132): descr.; DELAGE (54) p. 388. *M. testudinarius*; HINDE (125); ROWE (235) p. 293; WRIGHT (294).

+*Marsupitesinae* defined with list of genera; DELAGE (54) p. 388.

+*Megistocrinus*; op. cit. p. 385, fig. *M. abnormis*, ornament; WOOD (291) p. 63, pl. xv. *M. circulus?*, divergences from type; ROWLEY in GREENE (104) p. 181, pl. liv. *M. concavus*; WOOD (291) p. 65. *M. depressus*; CLARKE & LUTHER (40) p. 52, incl. *M. ornatus* (p. 64), *M. expansus*, loss of arms (p. 66), *M. farnsworthi* (p. 64), *M. latus* (p. 66), *M. multidecoratus* (p. 65), *M. nodosus*, variations fr. type (p. 65); WOOD (291). *M. ontario*; CLARKE & LUTHER (40) p. 48, 52. *M. regularis* n. sp., Devonian, Mid. Traverse Limest., Michigan (p. 59, pl. xv), *M. rugosus*, variations fr. type (p. 63), *M. sphaeralis* n. sp., Devonian, Mid. Traverse Limest., Michigan, also abnormality (p. 60, pl. xv); WOOD (291). *M. spinosulus*; op. cit. p. 65: notes; ROWLEY in GREENE (104) p. 182, pl. liv. *M. tuberatus* n. sp., Devonian, Upper Traverse Limest., Michigan, also young; WOOD (291) p. 57, pls. xv, xvi.

+*Melocrinus*; DELAGE (54) p. 383, fig. *M. clarkei* (p. 62), *M. gracilis* (p. 52); CLARKE & LUTHER (40). *M. wittenbergensis* n. sp., Delthyris Limest., Silurian, Wittenberg, Mo.; ROWLEY (236) p. 274, pl. xvi.

Metacrinus rotundus incl. *M. interruptus*; SPERRY (265).

+*Millerierinus*:—*M. cf. adneticus*; MARIANI (183) p. 153, 154. *M. echinatus*; STRANGWAYS (266) p. 40, 49. *M. escheri*, *M. goupilianus*; MAIRE (178). *M. hausmanni*; MARIANI (183) p. 154. *M. horridus*; MAIRE (178). *M. longimanus*, *M. mespiliformis*, *M. nobilis*; WALTHER (281) p. 165. *M. nodotianus*, *M. regularis*; MAIRE (178). *M. rosaceus*; WALTHER (281) p. 165.

+*Myrtillocrinus*; DELAGE (54) p. 380, fig. *M. americanus*; CLARKE & LUTHER (40) p. 43.

+*Parisocrinus*; DELAGE (54) p. 380, figg.

+*Pentacrinus* [including *Balanocr.*, *Cainocr.*, *Isocr.*]; op. cit. p. 394, figg. *P. sp.*; BOEHM (28) p. 7, pl. i. *P. sp.* columnars of special shape; ROWE (235) p. 243, 293. *P. alternans* d'Orb; LORIOI (162) p. 62. *P. amblyscalaris*; MAIRE (178): SIEMIRADZKI (255) p. 139. *Cainocr. andreae* & var. nov. *major*, descr.; LEUTHARDT (152) p. 93, pl. ii, fig. *P. cf. andreae*; MADSEN (176) pp. 172, 200, pl. vi. *P. angulatus*; SCHAEFER (242) p. 31. *P. annulatus?*; STRANGWAYS (266) p. 67, 73. *Isocr. australis*, n. var. *albascopularis*, Upper Cretaceous, White Cliffs, N.S.W.; ETHERIDGE (74) p. 251, pl. xxviii. *P. bajocensis*; RICHE (228) p. 210. *P. basaltiformis*; MARIANI (183) p. 153, 154: SCHAEFER (242) p. 34: ZLATARSKI (299). *P. buchi*; COLLET (44)

p. 77, 79. *P. desori*; SIEMIRADZKI (255) p. 139. *P. fittoni*; FEARN-SIDES (76): STRANGWAYS (266) p. 78. *P. fossilis*; SCHUCHERT (247) pl. cii. *P. gevreyi* **n. sp.**, Valangian, Malleval, Isère, columnals only; LORIOLO (162) p. 59, pl. iv. *Isocr. holsaticus* **n. sp.**, Senonian, Holstein; JAEKEL (133) p. 195. *P. lanceolatus*; JAHN (135). *P. leuthardi*, redescri.; LEUTHARDT (152) p. 102, pl. iii. *P. lissajouxi* **n. sp.**, Hauterivian, St. Pierre de Cherenne, Isère, columnals only (p. 63, pl. iv), *P. mallevalensis* **n. sp.**, Neocomian, Malleval, Isère, columnals only (p. 60, pl. iv), *P. neocomiensis* d'Orbigny non Desor is perhaps *P. mallevalensis* (p. 61), *P. peyroutensis* **n. sp.**, Hauterivian, Peroules, Basses-Alpes, columnals only (p. 62, pl. iv); LORIOLO (162). *P. cf. punctiferus*; ZLATARSKI (299). *P. scalaris*; SCHAEFER (242) p. 32. *P. sigmaringensis*; ROLLIER (230) p. 464. *P. subangularis*; SCHAEFER (242) p. 34: SCHUCHERT (247) pl. ci. *P. subteroides*; SCHAEFER (242) p. 34: sub *Balanocr.*; RZEHAK (238) p. 148, & (239). *P. tuberculatus*; MARIANI (183) p. 138: SCHAEFER (242) p. 31. *P. vulgaris*; STRANGWAYS (266) p. 9, 15. *P. wiesbauri* **n. sp.**, Mid. Lias, Moravia, columnals; RZEHAK (238) p. 148, pl. i.

Pentacrinusinae defined with list of genera; DELAGE (54) p. 394.

Periechocrinidae, vide *Tylocrinus*.

+*Periglyptocrinus billingsi*; AMI (7) p. 62, 63.

+*Petalocrinus*; DELAGE (54) p. 380, fig.

+*Phyllocrinus* aff. *nutantiformis*; DEL CAMPANA (55) p. 268.

+*Pisocrinus*:—*P. glabellus* **n. sp.**, Niagaran, Ste. Genevieve co., Mo. (p. 270, pl. xvi), *P. globosus*? "if distinct might be called *P. sphaericus*," ibid. (p. 270, pl. xvi), *P. gorbyi*?, descr. (p. 269, pl. xvi), *P. granulatus* **n. sp.**, Niagaran, Ste Genevieve co., Mo. (p. 269, pl. xvi); ROWLEY (236). *P. sphaericus* **n. sp.**? vide *P. globosus*. *P. (?) yassensis* **n. sp.** with **n. var. lobata** Silurian near Yass, N.S.W.; ETHERIDGE (75).

+*Platycrinus* descr.; DELAGE (54) p. 383, figg. *P. eboreus*; CLARKE & LUTHER (40) p. 48, 55. *P. laevis*, *P. ornatus*; DESTINEZ (59) p. M 145. *P. striobrachiatus*; WHITFIELD (286).

+*Platycrinusinae* defined with list of genera; DELAGE (54) p. 383.

+*Plicatocrinus fraasi*; WALTHER (281) p. 158.

+*Porocrinus*; DELAGE (54) p. 380 & fig.

+*Poteriocrinus*:—*P?* sp.; KITTL (141) pp. 666, 681. *P. crassus*; PEACH (209) pp. 842, 849, 850. *P. diffusus*; CLARKE & LUTHER (40) p. 52. *P. fusiformis*; HIND (123) p. 192. *P. nereus*, *P. nycteus*; CLARKE & LUTHER (40) p. 52.

+*Reteocrinus*; DELAGE (54) p. 386, fig.

+*Rhipidocrinus* descr.; DELAGE (54) p. 385.

+*Rhipidocrinusinae* defined with list of genera; loc. cit.

Rhipidocrinus descr.; op. cit. p. 391, figg. *R. lofotensis*; GRIEG (107) p. 12.

+*Rhizocrinusinae* defined with list of genera; DELAGE (54) p. 391.

+*Rhodocrinus*:—*R. gracilis*, *R. nodulosus*; CLARKE & LUTHER (40) p. 52. *R. pyriformis*; AMI (7) p. 61. *R. spinosus*; CLARKE & LUTHER (40) p. 52.

+*Saccocoma* descr.; DELAGE (54) p. 393. *S. pectinata* (p. 165), *S. schwertschlagerei* **n. sp.**, Kimmeridgian, Solenhofen Plattenkalk (p. 166, fig.), *S. tenella* (p. 158, 165); WALTHER (281).

+*Saccocominae* defined with list of genera; DELAGE (54) p. 393.

+*Scaphiocrinus longicaudatus* **n. sp.**, Viséan, Belgium; FRAIPONT (85) p. 7, pl. i.

+*Scyphocrinus* (vide etiam *Lobolithus*); DELAGE (54) p. 383. *S. elegans*; ROUSSEL (238) p. 16.

+*Solanocrinus gracilis*; WALTHER (281) p. 165.

+*Stephanocrinus*; DELAGE (54) p. 377.

+*Stephanocrinusinae* defined; loc. cit.

- +*Stereocrinus*:—*S. barrisi*; WOOD (291) p. 79. *S.?* *indianensis*, notes; ROWLEY in GREENE (104) p. 182, pl. liv.
 +*Strotocrinus*; DELAGE (54) p. 385, fig.
 +*Synerocrinus*; DELAGE (54) p. 388, fig.
 +*Taxocrinus*; loc. cit., fig. *T. lobatus*; WOOD (291) p. 81.
Thaumatoocrinus; DELAGE (54) p. 395, fig.
 +*Thylacocrinus*; DELAGE (54) p. 386, fig. *T. clarkei*; CLARKE & LUTHER (40) p. 52.
 +*Tripleuroocrinus* n. g. of *Gasterocomidae* (p. 56), with genotype *T. levis* n. sp., Onondaga Limest., New York (p. 57 pl. xvi); WOOD (291).
 +*Tylocrinus* n. g. of *Periechocrinidae*, with genotype *T. novus* n. sp., Devonian, Upper Traverse Limest., Michigan, abnormality; WOOD (291) p. 66, pl. xvi.
 +*Uintacrinus*; JAEKEL (132): descr.; DELAGE (54) p. 389. *U.* sp.; DIBLEY (62); HINDE (125); ROWE (235) p. 293; WRIGHT (294). *U. socialis*; SCHUCHERT (248) pl. ciii: WHITEAVES (285).
 +*Uintacrinusinae* defined; DELAGE (54) p. 389.
 +*Vasocrinus sculptus*; WOOD (291) p. 81.

(G.) +CYSTIDEA*

(including EDRIOASTEROIDEA).

- Cystoidia* divided into Orders *Amphorida*, *Rhombiferida*, *Diploporida*, *Edrioasterida*; DELAGE (54) p. 405.
Agelacrinus; DELAGE (54) p. 415, fig. *A. chapmani*; AMI (7) p. 61. *A. cincinnatiensis*, anat.; SPENCER (264).
Amphorida Order defined, with Famm. *Aristocystis*-, *Anomalocystis*-, *Mulocystis*-, & *Comarocystis*-inae; DELAGE (54) p. 405.
Anomalocystis, diagnosis, alleged anus, distinguished from *Ateleocystis* & *Plucocystis* (p. 205), *A. cornutus* descr. (p. 206, pl. xl, fig.), *A. (?) disparilis* descr. (p. 207, fig.); SCHUCHERT (249).
Anomalocystisinae defined with list of genera; DELAGE (54) p. 407.
Apiocystinae, vide *Tetracystis*.
Apiocystis, diagnosis, distinguished from *Lepocrinites* [*Lepadocr.*] & credited with *A. pentrematoides*, *Pseudocr. oblongus* pars, & *A. elegans*; SCHUCHERT (249) p. 210. *A. canadensis*, vide *Callocystis*. *A. elegans*, specimen from Hamilton, Ont., descr. (p. 212, pl. xxxiv), *A.?* *huronensis*, holotype descr. (p. 212); SCHUCHERT (249). *A. imago*, vide *Hallicystis*. *A.?* *tecumseth*, rejected; SCHUCHERT (249) p. 211.
Aristocystis descr.; DELAGE (54) p. 407, figg.
Aristocystisinae defined with list of genera; DELAGE (54) p. 407.
Asteroblastus; DELAGE (54) p. 413, figg.
Blastoidocrinus; DELAGE (54) p. 413.
Bolboporites americanus; AMI (8) p. 140.
Calix; DELAGE (54) p. 407 & fig.
Callocystis diagnosis, incl. *Anthocystis* (p. 242), *C. canadensis* (Bill. sub *Apiocystis*) incl. *C. tripectinatus* Ringueb. (p. 245, pl. xxxiv), *C. jewettii* descr. (p. 243 & fig., pl. xxxiv); SCHUCHERT (249).
Carpoida, summary of Jaekel's classification, which is rejected; DELAGE (34) p. 406.
Caryocrinusinae defined with list of genera, DELAGE (54) p. 411.
Caryocystis; DELAGE (54) p. 410, fig.

† All extinct.

* Names that are sometimes given the termination *-ites* (e.g. *Anomalocystites*) are here treated as always ending in *-us*, *-a*, or *-is*, as the case may be.

- Coelocystis*, diagnosis, genotype in *Hemicosmites subglobosus* Hall incl. *Sphaerocystis dolomiticus* Jaekel (p. 246), *C. subglobosus* descr., abnormality (p. 248, figg.); SCHUCHERT (249).
- Comarocystis*; DELAGE (54) p. 408.
- Comarocystisinae* defined; loc. cit.
- Cryptocrinus*; DELAGE (54) p. 412.
- Cryptocrinusinae* defined; loc. cit.
- Cyathocystis*; DELAGE (54) p. 415 & fig.
- Cyclocystoides*; DELAGE (54) p. 416, fig.
- Cystaster*; DELAGE (54) p. 415, fig.
- Cystoblastus*; DELAGE (54) p. 411, figg.
- Dendrocystis*; DELAGE (54) p. 408, fig.
- Diploporida* Order defined (p. 405) with Famm. *Sphaeronites*-, *Glyptosphaerites*-, *Mesocystis*-, *Gomphocystis*-inae (p. 412); DELAGE (54).
- Discocystis*, vide *Echinodiscus*.
- Echinodiscus* Worth. & Miller [i.e. *Discocystis* Greg.], treated as *Ech.*, *E. kaskaskiensis*, *E. optatus*, *E. sampsoni*; KLEM (142) p. 73.
- Echinoencrinus* descr.; DELAGE (54) p. 411, fig. *E. fenestratus* n. sp. Niagaran, Decatur co., Tenn., Troost MS. 1849, now first published & referred to *Tetracystis* (q. v.); SCHUCHERT (249) p. 219.
- Echinosphaera* descr.; DELAGE (54) p. 410, figg. *E. aurantium*; HOLM (126) p. 56, fig.: WEYSSE (284) p. 89, fig.
- Echinosphaeritesinae* defined with list of genera; DELAGE (54) p. 410.
- Edrioaster* descr.; DELAGE (54) p. 414, figg.
- Edrioasterida*, Order defined (p. 405) descr. (p. 414); DELAGE (54).
- Eucystis*; DELAGE (54) p. 412, fig.
- Glyptocystisinae* defined with list of genera; DELAGE (54) p. 411.
- Glyptosphaerites* descr.; DELAGE (54) p. 412.
- Glyptosphaeritesinae* defined with list of genera; loc. cit.
- Gomphocystis*; DELAGE (54) p. 413, fig.
- Gomphocystisinae* defined with list of genera; loc. cit.
- Hallicystis*, diagnosis (p. 216), *H. elongata* (p. 217), *H. imago* (p. 216, fig.); SCHUCHERT (249).
- Hemicosmites* descr.; DELAGE (54) p. 411.
- Jaekelocystis* diagnosis (p. 222), *J. avellana* n. sp., Manlius formation, Keyser, W. Va. (p. 226 & fig., pl. xxxvii), *J. hartleyi*, descr. (p. 224 & fig., pl. xxxvii), *J. papillatus* n. sp., Manlius formation, Keyser W. Va. (p. 225, pl. xxxvii); SCHUCHERT (249).
- Lepadocrinus*, spelling *Lepocrinites* adopted, diagnosis (p. 213), *L. ? angelini* (p. 214), *L. gebhardi*, anal area (p. 215), *L. manlius* n. sp., Manlius formation, Keyser, W. Va. (p. 214 & fig., pl. xxxvii, xxxix); SCHUCHERT (249).
- Lepidodiscus*; DELAGE (54) p. 415, fig. *L. pileus*, anat.; SPENCER (264).
- Lepocrinites*, vide *Lepadocrinus*.
- Macrocystella* descr.; DELAGE (54) p. 410.
- Macrocystellinae* defined with list of genera; loc. cit.
- Malocystis*; DELAGE (54) p. 408. *M. murchisoni*; AMI (8) p. 140.
- Malocystisinae* defined with list of genera; DELAGE (54) p. 408.
- Mesocystis* descr.; DELAGE (54) p. 413, figg.
- Mesocystisinae* defined with list of genera; loc. cit.
- Mitrocystis* descr.; DELAGE (54) p. 407, figg.
- Palaeocystis tenuiradiatus*; AMI (8) p. 140.
- Placocystis* descr.; DELAGE (54) p. 407.
- Pleurocystis*; DELAGE (54) p. 411, figg.
- Proteroblastus*; DELAGE (54) p. 413, fig.
- Protocrinus*; DELAGE (54) p. 413, fig.
- Pseudocrinus*, diagnosis (p. 226), *P. abnormalis* n. sp., Manlius formation, Keyser, W. Va., "a monstrosity" (p. 231 & fig., pl. xxxv), *P. clarki*,

- descr. (p. 233, pls. xxxvi, xxxix), *P. claypolei* **n. sp.**, Manlius formation, Clark's Mills, New Bloomfield, Pa. (p. 232, pl. xxxvii), *P. elongatus* **n. sp.**, Manlius formation, Martin's Mt., Bedford co., Pa. (p. 235 & fig., pl. xxxv), *P. gordonii*, descr. (p. 229 & fig., pls. xxxvi, xxxix), *P. perdewi*, descr., growth-stages (p. 236 & fig., pls. xxxvi, xxxix), *P. stellatus*, descr. (p. 232, pls. xxxv, xxxix), *P. subquadratus* **n. sp.**, Manlius formation, near Cumberland, Md. (p. 234, pl. xxxv); SCHUCHERT (249).
- Rhombiferida* Order defined (p. 405) descr. with Famm. *Echinosphaerites*-, *Macrocyttell*-, *Glyptocystis*-, *Caryocrinus*-, *Cryptocrinus*-inae (p. 408); DELAGE (54).
- Sphaerocystis*, diagnosis (p. 248), *S. bloomfieldensis* **n. sp.**, Manlius formation, New Bloomfield, Pa. (p. 251), *S. globularis* descr. with **n. var. ovalis** (p. 252 & fig., pl. xxxviii), *S. multifasciatus* descr. (p. 250 & figg., pls. xxxviii, xxxix); SCHUCHERT (249).
- Sphaeronites* descr.; DELAGE (54) p. 412, figg. *S. pomum*; HOLM (126) p. 47, figg.
- Sphaeronitesinae* defined with list of genera; DELAGE (54) p. 412.
- Staurocystinae*, vide *Trimerocystis*.
- Staurocystis*, distinguished from *Pseudocr.* & *Lepadocr.*; SCHUCHERT (249) p. 240.
- Steganoblastus*; DELAGE (54) p. 416, fig.
- Stribalocystis*? *elongatus*, "almost certainly not *Stribalocystis*," *S. missouriensis*, descr.; ROWLEY (236) p. 273, pl. xvi.
- Stromatocystis*; DELAGE (54) p. 415, fig.
- Tetracystis* **n. g.** of *Apiocystinae* (p. 217) with genotype *T. chrysalis* **n. sp.**, Manlius formation, Keyser, W. Va. (p. 218 & fig., pl. xxxiv, xl), *T. fenestratus* (Troost sub *Echinoencr.*) now first published & figd. (p. 219 & fig., pl. xxxiv); SCHUCHERT (249).
- Trimerocystis* **n. g.** of *Staurocystinae* (p. 237), with genotype *T. peculiaris* **n. sp.** (p. 239 & fig., pl. xxxv), Manlius formation, Keyser, W. Va.; SCHUCHERT (249).

(H.) +BLASTOIDEA.

- Blastoidia* classified A. *Regulares* with Famm. *Codaster*-, *Pentremites*-, *Troostocrinus*-, *Granatoblastus*-inae, B. *Irregulares*; DELAGE (54) p. 400. Castigation of HAMBACH (126) Zool. Rec. 1903; ROWLEY in GREENE (105) p. 192-197.
- Acentrotremites*; DELAGE (54) p. 401, fig.
- Codaster* descr.; op. cit. p. 400, figg. *C. cf. canadensis*; GRABAU (102A) p. 194. *C. pyramidatus*; CLARKE & LUTHER (40) p. 43.
- Codasterinae* defined with list of genera; DELAGE (54) p. 400.
- Cryptoschisma*; DELAGE (54) p. 400, fig.
- Eleutheroocrinus* descr.; DELAGE (54) p. 402, figg. *E. whitfieldi*; CLARKE & LUTHER (40) p. 52.
- Granatoblastusinae* defined with list of genera [the generic name *Granatoblastus* being rejected, this Fam. name cannot possibly stand]; DELAGE (54) p. 401.
- Granatocrinus* sp.; WEYSSE (284) p. 89, fig.
- Metablastus*, vide *Tricoelocrinus*.
- Nucleocrinus* descr.; DELAGE (54) p. 401, figg. *N. angularis*, abnormal (p. 190, pl. lvii), *N. imitator* (p. 191, pl. lvii); ROWLEY in GREENE (105). *N. lucina*; op. cit. p. 192, pl. lvii; CLARKE & LUTHER (40) p. 46, 49, 52, 55.

† All extinct.

Orbitremites ; DELAGE (54) p. 401, fig.

Orophocrinus ; DELAGE (54) p. 400, fig.

Pentremites ; loc. cit. figg. *P. koninckanus* ; UDDEN (272) p. 380, 390 : abnormal ; ROWLEY in GREENE (105) p. 190, pl. lvii. *P. leda* ; CLARKE & LUTHER (40) p. 52 : dwarf ; LOOMIS (161) p. 907, pl. i.

Pentremitesinae defined ; DELAGE (54) p. 400.

Phaenoschisma ; DELAGE (54) p. 400, figg.

Tricoelocrinus bipyramidalis, incl. *T. wortheni*, and not to be distinguished as *Metablastus* (p. 189, pl. lvii), *T. meeki* is young of *T. woodmani*, *T. obliquatus* is syn. of *T. woodmani*, *T. varsonviensis* is young of another sp. (p. 189), *T. woodmani*? (p. 189, pl. lvii) ; ROWLEY in GREENE (105).

Troostocrinus descr. ; DELAGE (54) p. 400, fig. *T.?* *dubius* descr. ; ROWLEY (236) p. 274, pl. xvi. *T. nitidulus* is young of a *Tricoelocrinus* ; ROWLEY in GREENE (105) p. 189.

Troostocrinusinae defined with list of genera ; DELAGE (54) p. 400.

Zygocrinus ; DELAGE (54) p. 402, fig.

(K.) INCERTAE SEDIS.

List of doubtful or imaginary forms ; DELAGE (54) p. 416.

+*Paropsonema cryptophya* ; CLARKE & LUTHER (40) p. 63.

XV. VERMES.

BY

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CONTENTS.

	Page		Page
INTRODUCTION	2	Cestoda	45
I. TITLES	4	General Biology	45
II. SUBJECT-INDEX.		Distribution	45
VERMES (general subject)	28	Systematic	45
ANNELIDA		Trematoda	47
Gephyrea	28	General Biology	48
General Biology	28	Distribution	48
Distribution	28	Systematic	48
Systematic	29	NEMATHELMINTHES	
Polychæta (incl. <i>Archian-</i>		Nematoda (incl. <i>Gordiacea</i>)	50
<i>nelida</i> & <i>Myzostomida</i>)	29	General Biology	50
General Biology	30	Distribution	51
Distribution	30	Systematic	51
Systematic	31	Acanthocephala	54
Oligochaeta	36	General Biology	54
General Biology	37	Distribution	54
Distribution	37	Systematic	55
Systematic	37	Chætognatha	55
Hirudinea	39	General Biology	55
General Biology	39	Distribution	55
Distribution	40	Systematic	55
Systematic	40	ROTIFERA	55
PLATYHELMINTHES		General Biology	55
Nemertina	41	Distribution	55
General Biology	41	Systematic	56
Distribution	41	GASTROTRICHA	56
Systematic	41	MESOOZOA	57
Turbellaria	41	HEMICHORDA (incl. <i>Phoronis</i>)	57
General Biology	41	General Biology	57
Distribution	42	Distribution	57
Systematic	42	Systematic	57

INTRODUCTION.

THE total number of titles for the year 1904 is about 480. Some of them were not published technically during that year, several foreign publications, though of an earlier date, having only reached this country in 1904. Some of the works here recorded have only an incidental interest for workers in *Vermes*; but many of the papers are important, and mark a genuine advance in the literature of the subject. A monograph on *Oligochæta* by DITLEVSEN (126) is worthy of mention, and also one by EHLERS (130) on the Annelids of New Zealand, while FAUVEL (137) reports on the *Polychæta* from Senegal. LUTHER'S (284) monograph on the *Eumesostomidae* contains much interesting work, and BURGER (61) in his monograph of *Nemertina* gives a very useful classification.

Faunistic studies are numerous and valuable this year. One of the most important contributions is by IKEDA (207) who describes the *Gephyrea* of Japan, many of which are new to science. COGNETTI (92-99) has several papers on *Lumbricidae* from various parts of the world, including many new species. The collections at the Museums of St Petersburg and of Colombo have been described by LINSTOW (267, 268, 260-266) who has written other papers on Helminthology this year. A faunal study of the marine *Turbellaria* from European coasts is published by GRAFF (170), while JOHNSON (220) writes on the fresh-water Nereids from the Pacific coast and Hawaii. Several additions to the Turbellarian Fauna of Russia (Kharkow and Poltava) have been made by MARKOW (293). The third part of SOULIER'S (426) revision of the Annelids from the region of Cete has appeared. MELL (303, 304) discusses the land Planarians from North East Africa and Madagascar, while MICHAELSEN (307) deals with the *Oligochæta* of Ceylon. Passing to the Bermudas, we find important additions made by VERRILL (459-461) to the literature of Turbellarians, *Nemertinae* and Annelids, with revisions of some New England genera and species. From MOORE (313, 314) we have several faunistic papers on *Polychæta* from North America, and HÉRUBEL (194, 195) gives accounts of *Priapulidae*, especially those from the west coast of Scandinavia. GIARD'S (159-162) papers are on *Gastrotricha* from Pas-de-Calais, and BRETSCHER'S (51, 52) are on the *Enchytraeidae* of Switzerland. It is of interest to add that MRÁZEK (325) records a new polypharyngeal Planarian from Montenegro.

Many important observations have been made this year in anatomy and histology, some of them dealing with matters of wider, biological significance. GOLDSCHMIDT'S (167) paper on the histology and cytology of *Nematoda* may be mentioned under this head, and HEIN'S (189) useful addition to histology in his description of the epithelium of *Trematoda*. Two papers by FUHRMANN (150, 151) deal with the anatomy of Trematodes, and RITTER & DAVIS (375) have studied the geology, morphology, and the immature forms of some *Enteropneusta* from western North America. SPENGLER (428-433) has again given us much valuable work on the *Enteropneusta* and BERGENDAL (24) has finished his third contribution on the anatomy and histology of *Carinoma oudemans*, with some systematic notes on *Nemertina* in general. The *Paramphistomidae* form the subject of two memoirs by FISCHÖDER (141, 142), and ASHWORTH'S (14) account of the lugworm is certainly worthy of mention. OSBORN'S (341) observations are on the habits and structure of *Cotylaspis insignis*, from Lake Chautauqua. LIVANOW (270) has investigated the morphology of *Hirudinina* and LÜHE (282, 283) describes many species of *Echinorhynchus*. Five papers by CAMERANO (64-68) go to swell the literature of *Oligochæta*, and a new genus has been added to *Hemichorda* by CAULLERY

& MESNIL (76). As regards the structure of special organs BRASIL (44) writes on the digestive apparatus of *Polygordius*, and SPIESS (434, 435) on that of *Aulostoma gula* and *Hemopsis sanguisuga*, while JORDAN (222) gives an account of the same organs, from rather a physiological standpoint, in *Aphrodite aculeata*. Important observations have been made by ROSSETER (382) on the genital organs of *Tenia sinuosa* and JAGERSKIÖLD (214) on those of a Distomum. GUNGL (176) carefully describes the blood vessels in the *Lumbricidæ*, while ARNESEN (13) writes a somewhat similar paper on those in the *Rhynchobdellidæ*. SCHEPOTIEFF (398) has worked at the structure of the "pockets" of setæ in some *Polychaeta* and also (399) on the organization of *Rhabdopleura*. SCHNEIDER'S (402) notes on the sense organs of *Eunice viridis* are interesting, and, as usual, the so-called "body-cavity urns" in *Sipunculus* receive a good deal of attention; see KUNSTLER & GRUDEL (238), LADREY (239, 240). A phylogenetic discussion of considerable importance comes from HUBRECHT (203, 204) in which he deals with the relationships of Annelids and Chordates, of Platyhelminths and Ctenophores. Some suggestive ideas are put forward on the subject of asymmetry in certain lower organisms, and its biological significance, by JENNINGS (219) who draws many of his observations from Rotifers.

Physiology is represented by very few memoirs, but it is to be noted that BOHN (30-34) is still working at movement in Annelids. ISSEL (208) refers to Rotifers being found endoparasitic in *Enchytraeidæ*, and DÉVÉ (121-123) records the occurrence of *Echinococcus* in rather unusual circumstances. The origin of pearls is a rather attractive subject, and there are papers on it this year by HERDMAN (193), GIARD (157) and BOUTAN (38).

One of the most valuable papers this year is by NELSON (329) on the early development of *Dinophilus*. There are many additions to Embryological literature. WOLTERECK (473) describes the development of *Polygordius* and VAN BENEDEN (456) that of *Phoronis*. MATTIEN'S (299) work has been on the embryology of fresh-water Dendroceles, and MONTGOMERY (310) writes on the structure and development of the larva of *Paragordius*. KATHARINER'S (226) attention has been given to the development of *Gyrodactylus elegans*, and LONGCHAMPS (274) describes the post-embryonal development of *Phoronis*, with notes on its affinities. TORREY'S (447) is an exhaustive treatise on the embryology of *Thalassema* and GEROULD (155, 156) has two papers on the development of *Sipunculus*. Experimentalists will be interested in BULLOT'S (58, 59) work on artificial parthenogenesis and regular segmentation in *Ophelia*, and also in YATSU'S (479) work on the development of egg-fragments in *Cerebratulus*. The spermatogenesis of *Ascaris megalocephala* has been followed in detail by TRETIKOFF (449, 450).

Again this year there are numerous papers on regeneration and regulation. See CHILD (84), SCHULTZ (408, 409), ZELENY (480), MORGAN (319-323), NUSBAUM (337, 338), HARPER (186), ORLANDI (340). MORGAN writes also on organic polarity and axial heteromorphosis (322).

A good deal of attention is being paid to Filarial disease, see BRUMPT (55-57), BOYCOTT (42), WELLMANN (467). As regards ankylostomiasis in the Cornish miners, see HALDANE (180-182); and for sleeping sickness CLARKE (85-89).

I. TITLES*.

1. [ANON.] Marine Biological Association. Plymouth marine invertebrate fauna, being notes of the local distribution of species occurring in the neighbourhood. Compiled from the records of the laboratory of the Marine Biological Association. J. Mar. Biol. Ass. vii, 2, pp. 155-298, 1 chart. [*Vermes*, pp. 211-233.]
2. [ANON.] Stem eelworm (*Tylenchus devastatrix*). J. Board Agric. London xi, 4, p. 219.
Destroying oats in Scotland. Remedies.
3. [ANON.] Husk or hoose in calves. Op. cit. xi, 10, p. 618. (*Strongylus micrurus*.)
4. [ANON.] Peregrine Earthworms at Peradeniya. Spolia Zeylan. i, 4, pp. 113, 114.
Editorial notes. Review of Dr Michaelsen's report on the *Oligochaeta* of Ceylon.—Cf. MICHAELSEN (307).
5. [ANON.] Classification. Natural. Canad. xxxi, pp. 210-218. [*Vermes*, pp. 210-214, 6 figg.]
6. ALESSANDRINI, G. Brevi osservazioni sullo sviluppo e ciclo evolutivo dell' *Anchylostoma (Uncinaria) duodenale* (Dub.). Boll. Soc. zool. Ital. (3) v, pp. 147-166, 3 figg.
7. ALLEN, E. J. The anatomy of *Pæcilocheetus* Claparède. Quart. J. Micr. Sci. xlviii, 1904, pp. 79-151, pls. vii-xii.
8. —. *Pallasia murata* n. sp.; a new British Sabellarian. J. Mar. Biol. Ass. vii, 2, pp. 299-304, pl. x.
9. *ALZONA, C. Sulla fauna delle caverne del Bolognese. Rendic. iv. Con. Unione Zool. Ital. Monit. Zool. ital. xiv, No. 12, pp. 328-330.
10. ANNANDALE, N. The *Gordiidae* in folk-lore. Nature lxi, p. 393.
11. APÁTHY, ST. V. Die drei verschiedenen Formen von Lichtzellen bei Hirudineen. Verh. Congr. Zool. 1902, pp. 707-728. [Cf. Zool. Rec. 1902, VERMES (6).]
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II. SUBJECT-INDEX.

VERMES.

GENERAL SUBJECT (Vermes collectively or more than one division).

[The following memoirs relate to the general subject or are collective:—BOVERI (40, 41), CAULLERY & MESNIL (77), GINESTE (164), HUBRECHT (204), HUDLESTON (205), LAUTERBORN (244), LUTHER (285), MICHAELSEN (306).]

Relationships to other invertebrate phyla, HUBRECHT (204).

Affinities of worms discussed, MICHAELSEN (306).

†Origin of halolimnic fauna of Lake Tanganyika, HUDLESTON (205).

Affinities of *Actinomyxide* to *Vermes*, CAULLERY & MESNIL (77).

Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (164).

Constitution of chromatin in the nucleus, BOVERI (40, 41).

Subterranean fauna, Puits de Padirac, VIRÉ, C.R. Ac. Sci. cxxxviii, p. 827.

Finland, plankton collections, LUTHER (285).

Upper Rhine, collections, LAUTERBORN (244).

ANNELIDA.

GEPHYREA.

[The following memoirs relate to *Gephyrea*:—GEROULD (155, 156), HÉRUBEL (194, 195), IKEDA (207), KUNSTLER & GRUVEL (238), LADREYT (239, 240), RETZIUS (371), TORREY (447), VERRILL (460, 461).]

GENERAL BIOLOGY.

On the so-called "urns" in *Sipunculus*, they are not phagocytes, and not parasites, LADREYT (239).

Three forms of pigment in *Sipunculus nudus*, LADREYT (240).

Early embryology of *Thalassema mellita*, TORREY (447).

On the development of the body cavity elements in *Sipunculus*, KUNSTLER & GRUVEL (238).

Development of *Sipunculus nudus*, GEROULD (155).

Embryonal development and its homologue, GEROULD (156).

DISTRIBUTION.

Scandinavian forms, morphology, HÉRUBEL (194, 195).

Japan, n. spp., IKEDA (207).

Bermudas, n. spp., VERRILL (460).

Bermudas, collections, VERRILL (461).

SYSTEMATIC.

- Aspidosiphon truncatus*, *A. steenstrupii*, Japan, IKEDA, J. Coll. Tokyo xx, 4, pp. 38, 40, figg. 66 & 67.
- A. misakiensis*, p. 41, figg. 9, 68-72, *A. uniscutatus*, p. 43, figg. 10, 73-77, *A. angulatus*, p. 45, figg. 11, 78-80, *A. spinalis*, p. 47, figg. 12, 81-85, Japan, IKEDA, t. c.; *A. spinulosum*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 670, **n. spp.**
- Bonellia minor*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 72, figg. 23, 101 & 102.
- B. miyajimai*, p. 73, *B. misakiensis*, p. 74, figg. 24, 103-105, Japan, IKEDA, t. c. **n. spp.**
- Clasiosiphon japonicum*, Japan, IKEDA, t. c. p. 49, figg. 13, 86-89, **n. sp.**
- Dendrostoma blandum*, *D. signifer*, pp. 53-57, figg. 14 & 15, 90 & 91, Japan, IKEDA, t. c.
- D. minor*, Japan, IKEDA, t. c. p. 57, figg. 16, 92-95, **n. sp.**
- Golfingia elongata*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 670, **n. sp.**
- Phascolion rectus*, p. 15, figg. 45-49, *P. artificiosus*, p. 18, figg. 6, 50-55, Japan, IKEDA, J. Coll. Tokyo xx, 4, **n. spp.**
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- P. nigrum*, p. 3, figg. 1, 25-27, *P. japonicum*, p. 5, figg. 2, 28 & 29, *P. misakianum*, p. 7, figg. 3, 30-33, *P. okinoseanum*, p. 9, figg. 4, 34-38, *P. owstoni*, p. 12, figg. 5, 39-44, Japan, IKEDA, J. Coll. Tokyo xx, 4, **n. spp.**
- Phymosoma onomichianum*, p. 26, figg. 7, 56-58, *P. nahense*, p. 29, figg. 8, 59-62, Japan, IKEDA, t. c. **n. spp.**
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- Sipunculus nudus*, embryonal development and its homologue, GEROULD, Mark Anniv. Vol. pp. 439-452, pl. xxxii; *S. nudus*, development, GEROULD, Amer. Natural. xxxviii, p. 493; *S. nudus*, "urns," LADREY, C.R. Ac. Sci. cxxxix, 2, pp. 370 & 371; *S. nudus*, three forms of pigment, LADREY, C.R. Soc. Biol. lvi, pp. 850-852; *S. nudus*, body cavity elements, KUNSTLER & GRUVEL, Pr-verb. Soc. Sci. Bordeaux 1896, pp. 57-60; *S. cumanensis*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 32, fig. 63.
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POLYCHAETA.

[The following memoirs relate to *Polychæta*:—ALLEN (7, 8), ASHWORTH (14), BOHN (30-34), BOLTON (35), BRASIL (44-46), BROWNE (54), BULLOT (58), CARAZZI (70), CAULLERY & MESNIL (79), EHLERS (130), FAUVEL (137, 138), FOX (147), FOX-STRANGWAYS (148), GIARD (159, 160), GILSON (163), GIRTY (165), GRAVIER (172), HOLM (198), HOLMES (200), HORST

(202), HUBRECHT (203, 204), IWANOW (213), JOHNSON (220), JORDAN (222), JUKES-BROWNE (224), KOROTNEFF (234), LÉGER (253, 254), LINVILLE (269), LOMMEN (273), MADSEN (288), MARTIN (296), MAXWELL (300), MONTGOMERY (310), MOORE & BUSCH (317), MOORE (313, 314), MUNTHE (326), NOBRE (333, 334), NUSBAUM (337), ORLANDI (340), PARKINSON (345), REMEŠ (368), RETZIUS (371), RICHE (373), ROVERETO (384), ROWE (385), SCHEPOTIEFF (398, 399), SCHRÖDER (405), SOLLMANN (425), SOULIER (426), VERRILL (459-461), WALLACE (464), WALTHER (465), WEIGELT (466), WILLEY (470), WILSON (471), WOOD (476), ZELENY (480).]

GENERAL BIOLOGY.

Habits, anatomy, histology, development and parasites of *Arenicola*, ASHWORTH (14).

Anatomy, metamerism of the nervous system in *Arenicola cristata*, LOMMEN (273).

Histology, digestive apparatus *Polychæta*, BRASIL (45).

Otocysts, FAUVEL (138).

Digestive apparatus, BRASIL (45).

Comparative study of muscular tonus, MAXWELL (300).

Morphology of *Chaetopterus*, GRAVIER (172).

Structure of the setæ-pouches, SCHEPOTIEFF (398).

Oocyte of *Tomopteris*, WALLACE (464).

Sense organs of *Eunice viridis* (Palolo worm), SCHRÖDER (405).

+Anatomy of n. spp., ROVERETO (384).

A new generic type of *Polygordida*, MOORE (316).

Affinities and systematic position, HUBRECHT (204).

Natural history of some tube-forming species, LINVILLE (269).

+Survey, collections, HOLMES (200).

Structural changes of ova in anisotonic solutions and saponin, SOLLMANN (425).

Development and structure of the larva of *Paragordius*, MONTGOMERY (310).

Embryology and cytology of the egg of *Myzostoma glabrum*, CARAZZI (70).

Artificial parthenogenesis and regular segmentation in *Ophelia*, BULLOT (58).

Movements of *Hediste diversicolor*, BOHN (30).

Respiratory movements, BOHN (33, 34).

Regeneration, IWANOW (213).

Regeneration experiments, NUSBAUM (337).

Regeneration of the head in *Clymene* spp., ORLANDI (340).

Compensatory regulation in *Hydroides* and *Apomatus*, ZELENY (480).

DISTRIBUTION.

+Tomsk, collections, POLÉNOFF (352).

+Krakau, Devonian species, GÜRICH (178).

+England, upper chalk, Cretaceous forms, JUKES-BROWNE (224).

+Lancashire coal measures, spp. found, BOLTON (35).

+Yorkshire, white chalk spp. ROWE (385).

+Scarborough, oolitic and Cretaceous forms, FOX-STRANGWAYS (148).

+Cornwall, north coast forms, FOX (147).

Plymouth, n. sp., ALLEN (8).

Lake Baical, collections, KOROTNEFF (234).

+Gotland, list of Silurian forms, MUNTHE (326).

Cape de la Hague, a new parasite on *Polycirrus hematodes*, CAULLERY & MESNIL (79).

- Pas-de-Calais, River Ambleteuse, fauna, n. sp., GIARD (161).
 +South Germany, collections, PARKINSON (345).
 +Solenhofen, fossil fauna, WALTHER (465).
 +Eastern Bohemia, chalk fossils, JAHN (215).
 +Corniche Alps, paleozoic fossils, D'OSSAT (342).
 +Bolderberg, collections, DEWALQUE (124).
 +Dalmatia, Eocene fauna, DAINELLI (111).
 +Silistria, collections, TOULA (448).
 +Grès Vosgien, Epinal, fossil fauna, NOËL (335).
 Cette, collections, SOULIER (426).
 North and South Portugal, marine fauna, synonymy, bibliography, NOBRE (333, 334).
 +East-Greenland, Jurassic *Serpulæ*, MADSEN (288).
 +Kansas, lower coal measures, BEEDE & ROGERS (23).
 +Tennessee and Kentucky forms from the Silurian and Devonian Limestones, FOERSTE (144).
 +Maryland, n. sp., MARTIN (296).
 +Colorado, Carboniferous forms, GIRTY (165).
 Massachusetts, n. sp., MOORE (314).
 Massachusetts, 2 n. spp., MOORE (313).
 California, n. gen. & n. sp., JOHNSON (220).
 California, n. spp., MOORE (315).
 Senegal, spp., FAUVEL (137).
 Cape of Good Hope, littoral forms, WILLEY (470).
 Malay, palolo and wawo worms, not identical, HORST (202).
 Hawaii, n. sp., JOHNSON (220).
 Bermudas, n. spp., VERRILL (459).
 Bermudas, collections, VERRILL (460).
 Japan, n. spp., MOORE & BUSCH (317).
 +New South Wales, Cretaceous forms, n. spp., ETHERIDGE (133).
 New Zealand, n. spp., EHLERS (130).

SYSTEMATIC.

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Amphiglene mediterranea, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
Amphitrite ornata, natural history, LINVILLE, Mark Anniv. Vol. pp. 227-235.
Aphroditiide, respiratory movements, BOHN, C.R. Soc. Biol. lvi, pp. 185 & 186; *A. aculeata*, physiology and morphology of the digestive organs, JORDAN, Zeitschr. wiss. Zool. lxxviii, pp. 165-195, pl. x.
Arabella maculosa, Bermuda, VERRILL, Tr. Connect. Ac. x (2), p. 651, n. sp.
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Aricia setosa, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 651; *A. chevalieri*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 83, figg. 23-28 : n. spp.
Armandia intermedia, Casamance River, Senegal, anatomy, FAUVEL, t. c. p. 86, figg. 29 & 30, n. sp.
Audouinia tentaculata, Luc-sur-Mer, parasitised by a coccid, *Angeiocystis audouinii*, n. sp., BRASIL, C.R. Ac. Sci. cxxxix, 2, pp. 645 & 646.
Autolytus (Proceræa) simplex, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 630, n. sp.

- Axiothella* **n. subgen.** for *A. catenata*, VERRILL, t. c., p. 657.
- Brada villosa*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, pp. 7-11.
- Branchiomma suspiciens*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 62, pl. ix, figg. 1-6, **n. sp.**
- Branchiosyllis lamellifera*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 624, **n. sp.**
- Carobia microphylla* (**n. n.** for *Eulalia* Schmarda) New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 16, pl. ii, figg. 8 & 9; *C. ochracea*, New Zealand, EHLERS, t. c., p. 15, pl. ii, figg. 5-7, **n. sp.**
- Chaetopterus*, morphology, GRAVIER, C.R. Ac. Sci. cxxxix, 2, pp. 545 & 546.
- Chrysopetalum elegans*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 668, **n. sp.**
- Cirrattulus*, regeneration, IWANOW, Protok. St. Peterb. Obshch. xxxv, 1904, 4, pp. 254-261. [German résumé, pp. 307-309.]
- C. spirabranchnus*, p. 492, pl. xxxviii, figg. 26 & 27; *C. luxuriosus*, p. 493, figg. 28-31, California, structure, MOORE, P. Ac. Philad. lvi, *C. (Audouinia) capillaris*, p. 653, *C. websteri*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Clymene collaris*, regeneration of the head, ORLANDI, Atti Soc. Ligustica xiv, p. 161, figg. A & B; *C. palermitana*, regeneration of the head, ORLANDI, t. c. p. 162, fig. c.
- C. monilis*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 89, figg. 31-41, **n. sp.**
- Clymenella* (*Axiothella*) *somersi*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 658, **n. sp.**
- C. insecta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 54, pl. vii, figg. 16-19, pl. viii, figg. 1-5, **n. sp.**
- Dasychone lucullana*, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
- Desmosyllis* **n. gen.** for *D. longisetosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 626 & 635, **n. sp.**
- Diopatra neapolitana*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 62, figg. 1 & 2; *D. cuprea*, natural history, LINVILLE, Mark Anniv. Vol. pp. 227-235.
- D. californica*, California, structure, MOORE, P. Ac. Philad. lvi, 2, p. 484, pl. xxxvii, figg. 1-9, **n. sp.**
- Drieschia pellucida*, Massachusetts, MOORE, op. cit. lv, 3, p. 794, pl. lv, **n. sp.**
- Euchone alicaudata*, Japan, MOORE & BUSCH, op. cit. lvi, p. 165, pl. xi, fig. 14-16, pl. xii, fig. 43, **n. sp.**
- Euclymene* **n. n.** for *E. coronata* **n. sp.**, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 655.
- Eulalia megalops*, Bermudas, VERRILL, t. c. p. 601, **n. sp.**
- Eunice*, **spp.**, structure of setæ-pouches, SCHEPOTIEFF, Zeitschr. wiss. Zool. lxxvii, pp. 586-605, pl. xxvi-xxviii; *E. viridis* (Palolo worm) sense organs, SCHRÖDER, Zeitschr. wiss. Zool. lxxix, pp. 132-150.
- E. biannulata*, California, structure, MOORE, P. Ac. Philad. lvi, p. 487, pl. xxxvii, figg. 10-18, pl. xxxviii, fig. 42, **n. sp.**
- Euphrosyne capensis*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 256, figg. 1-3.
- Eupolymnia* **n. n.** (with **n. subgen.** *Polymniella*) for **n. sp.** *E. aurantiaca*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 661.
- Eurymedusa picta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 21, pl. iii, figg. 5-9.
- Eusyllis* (**n. subgen.** *Synsyllis*) *viridula*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 622 & 635, **n. sp.**
- Exotokas brevipēs*, Cete, synonymy, anatomy, SOULIER, Mem. Ac. Montpellier. (2) iii, p. 345, fig. 7.

- Flabelligera lingulata*, p. 47, pl. vii, figg. 1-5, *F. semiannulata*, p. 49, figg. 6-10, New Zealand, EHLERS, Abh. Ges. Gotting. iii, **n. spp.**
- Glycera africana*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 75, figg. 14-17; *G. alba*, spermatozoa, male reproductive organs, RETZIUS, Biol. Untersuch. xi, p. 7, pl. 1, figg. 8-12.
- Glycinde*, spermatozoa, RETZIUS, t. c. p. 7, pl. 1, figg. 13-18.
- Goniada (Glycinde) dorsalis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 38, pl. v, figg. 12-17, **n. sp.**
- Grubea pusilla*, *G. limbata*, Cette, anatomy, synonymy, SOULIER, Mem. Ac. Montpell. (2) iii, pp. 333-342, figg. 4 & 5.
- Grubeosyllis n. n.* (= *Grubea* Quatr.) *nitidula*, *G. rugulosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 629-633, **n. spp.**
- Haplosyllis cephalata*, p. 613, *H. palpata*, p. 615, Bermudas, VERRILL, t. c. **n. spp.**
- Hediste diversicolor*, movements, BOHN, C.R. Soc. Biol. lvii, pp. 297 & 298, 3 figg.
- Hemilepidia erythrotania*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2), ix, 6, p. 258, figg. 6-26.
- Hemisyllis n. gen.* for *H. dispar n. sp.*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 619.
- Heteromorphysa n. gen.* for *H. tenuis n. sp.*, Bermudas, VERRILL, t. c. p. 637.
- Hypsicomus lyra*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 161, pl. xi, figg. 7-13, pl. xii, fig. 42, **n. sp.**
- Lagis koreni*, digestive apparatus, BRASIL, Arch. Zool. exp. Hist. Nat. (4) ii, xxxii, pp. 91-255.
- Laonome ceratodaula (n. n. for Sabella Schmarda)* New Zealand, anatomy, EHLERS, Abh. Ges. Gotting. iii, p. 64.
- L. tridentata*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 164, pl. xii, fig. 44, **n. sp.**
- Leodice elegans*, p. 640, *L. stigmatura*, p. 641, *L. concinna*, p. 643, *L. tenuicirrata*, p. 643, *L. unifrons*, p. 644, *L. margaritacea*, p. 644, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Lepidonotus polychroma*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 7, pl. i, figg. 1-6; *L. squamatus*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, fig. 1-6; *L. clava semitectus*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 256, fig. 4.
- Leprea haplocheta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 59, pl. viii, figg. 13-18, **n. sp.**
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OLIGOCHÆTA.

[The following memoirs relate to *Oligochæta*:—APATHY (11), BORTOLLOTTI (37), BOVARD (39), BRETSCHER (51, 52), CAJAL (63), CAULLERY & MESNIL (78), COGNETTI (92-99), DITLEVSEN (126), ENTZ (132), FAUVEL (139), GOLDSCHMIDT (166), GUNGL (176), HANEL (185), HARPER (186), HOLMGREN (201), HUBRECHT (203), ISSEL (209), KORSCHULT (235), MALAQUIN (290), MICHAELSEN (306, 307), MOREIRA (318), MORGAN (321), NUSBAUM (338), PIERANTONI (351), RAYMOND & FULLER (365), REEKER (366), ROSA (377, 378, 379), SANDOR (394), SCHNEE (401), SMITH & BARRETT (422), THEOBALD (445), TRUMBULL (451), UDE (452), VERRILL (461).]

GENERAL BIOLOGY.

- Morphology : head, as metamere, MALAQUIN (290).
 Anatomy and histology of the blood system, GUNGL (176).
 Blood flow in *Diplocardia Communis*, SMITH & BARRETT (422).
 On the existence of a tubular apparatus in the nervous tissue of the earthworm, CAJAL (63).
 Psychology, HANEL (185).
 Distribution of sense organs in *Microscolex elegans*, BOVARD (39).
 Affinities and systematic relationships, HUBRECHT (203).
Actinomyxidæ as parasites of *Tubificidæ*, CAULLERY & MESNIL (78).
 Variation and correlation, *Lumbricus*, dimensions and number of somites, RAYMOND & FULLER (365).
 Roots of garden plants damaged by *Enchytræus* worms, at Nottingham, THEOBALD (445).
 Regeneration in *Enchytræidæ*, NUSBAUM (338).
 Regeneration, MORGAN (321).
 Regulation in *Stylaria lacustris*, HARPER (186).
 Double formations in *Lumbricidæ*, KORSCHOLT (285).
 Development of earthworms, REEKER (366).
 Faunistic, ENTZ (132).

DISTRIBUTION.

- Geographical distribution, UDE (452).
 Ireland, *Allolobophora cyanea*, TRUMBULL (451).
 Switzerland, fauna, localities, lists, BRETSCHER (51).
 Switzerland, n. spp., BRETSCHER (52).
 Italy, n. spp., COGNETTI (92, 94).
 Italy, n. sp., *Allolobophora*, ROSA (379).
 Bologna, earthworms, BORTOLOTTI (37).
 Gulf of Naples, n. spp., PIERANTONI (351).
 Modena, n. sp., *Allolobophora*, ROSA (379).
 Modena, n. spp., ISSEL (209).
 Modena, cave forms, n. spp., COGNETTI (99).
 Ecuador, n. spp., COGNETTI (96).
 Costa Rica, n. spp., COGNETTI (93, 97).
 Brazil, lists of spp. with characters [no plates], MOREIRA (318).
 Chili, n. sp., COGNETTI (98).
 Patagonia, n. sp., ROSA (377).
 Bermudas, VERRILL (461).
 Ceylon, n. spp., MICHAELSEN (307).
 Ceylon, Earthworms, *Spolia Zeylan.* i, 4, pp. 113 & 114.
 Central Ceylon, n. sp., MICHAELSEN (307).

SYSTEMATIC.

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GENERAL BIOLOGY.

Morphology, LIVANOW (270).

Anatomy and histology of the digestive organs of *Aulostoma*, SPIESS (434).

Histology of digestive epithelium in *Hæmopsis sanguisuga*, SPIESS (435).

Muscle fibres of *Branchellion*, PÉREZ & GENDRE (349).

- Histology of cylindrical epithelial cells, HOLMGREN (201).
 Histology of brain and nerve cord of *Placobdella pediculata*, HEMINGWAY (191).
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 Histology of the blood system of the *Rhynchobdellidæ*, ARNESEN (13).
 Three forms of light cells, APÁTHY (11).
 Leech as a sight restorer, CLARKE (86).
 Ergastoplasmic functions, nephridia, *Hirudo*, FAGE (134).
 Ovogenesis of *Branchellion*, PÉREZ & GENDRE (348).
 Gregarines parasitising *Hirudinea*, BRUMPT (55).

DISTRIBUTION.

- Lake Baical, list of spp. found, YAKHONTOV (478).
 Sligo, freshwater leeches, SCHARFF (396).
 Roumania, Hirudinidæ; SCRIBAN (44).
 North and South Portugal, marine fauna, NOBRE (333, 334).
 Constantine, Algeria, a Trypanosome in *Helobdella algira*, BILLET (25).
 Victoria, a freshwater leech, KERSHAW (230).

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GENERAL BIOLOGY.

Monograph, BURGER (61).

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Experiments on the development of egg fragments in *Cerebratulus*, YATSU (479).]

DISTRIBUTION.

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[The following memoirs relate to *Turbellaria*:—BOHN (31, 32), BRESSLAU (50), CHILD (84), ENTZ (132), GIARD (161), GRAFF (170), HUBRECHT (204), KEEBLE (228), KERSHAW (230), KOROTNEFF (234), LAIDLAW (241), LUTHER (284), MARKOW (293), MARPMANN (295), MATTIESEN (299), MELL (303, 304), MORGAN (319–322), MORGAN & SCHIEDT (323), MRÁZEK (325), NELSON (328, 329), NEPII (330), SABUSSOW (388), SÁNDOR GORKA (394), SCHULTZ (408, 409), STEVENS (437), VERRILL (459), WEIGELT (466), YAKHONTOV (478).]

GENERAL BIOLOGY.

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Movements, BOHN (31, 32).

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Regeneration in *Planaria lugubris*, SCHULTZ (409).

Regeneration, MORGAN (319).

Regeneration in *Phagocata gracilis*, MORGAN & SCHIEDT (323).

Form-regulation, CHILD (84).

Control of heteromorphosis in *Planaria maculata*, MORGAN (320).

Polarity and axial heteromorphosis in *Planaria* spp., MORGAN (322).

Spermatogenesis and embryology of *Planaria simplissima*, STEVENS (437).

Cell-lineage and early development of *Dinophilus*, NELSON (329).

Early development of *Dinophilus* as compared with that of Annelids, NELSON (328).

Embryology of Dendrocoeleles, MATTIESEN (299).

Development of Rhabdocoeles, BRESSLAU (50).

Fauna of salt water, continental, ENTZ (132).

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Affinities and systematic position, HUBRECHT (204).

DISTRIBUTION.

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Pas-de-Calais, faunistic, GIARD (161).

Montenegro, n. sp., MRÁZEK (325).

European Coasts and Orotava, n. spp., marine forms, GRAFF (170).

North East Africa, n. spp., MELL (303).

East Africa, n. spp., NEPPI (330).

Madagascar, n. spp., MELL (304).

Thursday Island, n. sp., LAIDLAW (241).

Bermudas, n. spp., VERRILL (459).

Victoria, 5 land Planarians, KERSHAW (230).

New Zealand, n. spp., NEPPI (330).

SYSTEMATIC.

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Castrada segne, p. 177, figg., *C. cuénoti*, p. 186, figg., *C. neocomiensis*, p. 192, figg., *C. hofmanni*, p. 196, figg., *C. viridis*, p. 205, pl. viii, fig. 2, *C. intermedia*, p. 209, fig. 7, *C. armata*, p. 212, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii; *C. radiata*, *C. chlorea*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, pp. 46 & 47, figg. 42 & 43.

C. stagnorum, p. 183, figg., *C. sphagnetorum*, p. 202, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii, n. spp.

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- Dolichoplana voeltzkowi*, Madagascar, anatomy, MELL, Abh. Senckenb. Ges. xxvii, 2, p. 224, pl. xxxv, figg. 8-11.
- Gyrator notops*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 49, fig. 45.
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- Pelmatoplana mahéensis*, p. 194, pl. xxxi, fig. 1 and text-figg. 1 & 2, *P. braueri*, p. 202, fig. 2, Madagascar, structure, MELL, Abh. Senckenb. Ges. xxvii, 2.
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- P. armata*, p. 28, fig. 13, *P. sibirica*, p. 30, fig. 14, *P. grubii*, p. 31, fig. 15, *P. dybowski*, p. 33, fig. 16, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi; *P. montenigrina*, Montenegro, MRÁZEK, SB. Bohmisch. Ges. 1903, xxxiii, 43 pp., 2 pls.; *P. neumanni*, East Africa, *P. schauinslandi*, New Zealand, pp. 309-324, pl. ix, figg. 7-12, pl. x, figg. 13-16, NEPPI, Zool. Jahrb. Syst. xxi: **n. spp.**
- Planocera graffi*, GORKA, Allatt. Kozl. Magyar Tars. i, 1902, p. 105, fig. 3. *Platydemus montanus*, North East Africa, MELL, Zool. Jahrb. Syst. xx, p. 484, figg. 13-18, **n. sp.**
- Procotyla baicalensis*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, p. 23, fig. 11, **n. sp.**
- Proporus venenosus*, Sebastopol, GRAFF, Zeitschr. wiss. Zool. lxxviii, p. 215, pl. xiii, figg. 30 & 31.
- Pseudoceros superbus*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 596, pl. lxx, fig. 5.
- P. bicolor*, *P. aureolineata*, Bermudas, VERRILL, op. cit. xi (1), p. 42, pl. v, figg. 5 & 6; *P. pardalis*, Bermudas, VERRILL, op. cit. x (2), p. 596, pl. lxx, fig. 6: **n. spp.**
- Rhynchomesostoma* **n. gen.** for *R. rostratum* (= *Fusciola* Müller), LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 158, figg.
- Rimaccephalus punctatus*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, p. 5, **n. sp.**
- Sorocelis nigrofasciata*, p. 7, figg. 1 & 2, *S. hepatizon*, p. 9, fig. 3, *S. tigrina*, p. 11, fig. 4, *S. guttata*, p. 20, figg. 9 & 10, Lake Baical, SABUSSOW, t. c.
- S. fungiformis*, p. 13, fig. 5, *S. lineata*, p. 15, fig. 6, *S. leucocephala*, pp. 17-19, fig. 8, Lake Baical, SABUSSOW, t. c. **n. spp.**
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- Stylochus vigilax*, Thursday Island, LAIDLAW, Mem. Manchester Soc. xlviii, No. 15, p. 2; *S. bermudensis*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 43, **n. sp.**
- Tetracelis marmorosum*, anatomy, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 166, figg.
- Thysanozoön griseum*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 4, pl. v, fig. 7, **n. sp.**
- Trigonoporus microps*, Bermudas, VERRILL, t. c. p. 45, pl. v, fig. 2, **n. sp.**
- Typhloplana minima*, anatomy, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 174, figg.
- Vortex hellus*, p. 52, fig. 48, *V. sexdentatus*, p. 53, fig. 49, *V. pictus*, p. 54, fig. 50, *V. hallezi*, p. 55, fig. 51, *V. millportianus*, p. 56, fig. 52, *V. truncatus*, p. 56, *V. grafi*, p. 58, fig. 54, MARKOW, Trudui Kharkov. Univ. xxxix, 1.
- V. kharkowiensis*, MARKOW, t. c. p. 58, **n. sp.**

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GENERAL BIOLOGY.

Anatomy of various forms, LINSTOW (260).
 Amitosis in cells of *Moniezia*, CHILD (83).
 Marsupial parasites, ZSCHOKKE (484).
 Parasites of man and domestic animals, TEMPÈRE (442).
 Fish parasites, SCHNEIDER (404).
 Sub-conjunctival *Cysticercus*, TERRIEN (443).
 Infection of dog by *Dibothriocephalus latus*, RÁTZ (363).
 Chicken tapeworm, RANSOM (362).
 Parasites of higher animals, mode of infection, parts attacked, symptoms; anatomy and biology of parasite, HALL (183).
 Practical demonstrations of parasitology, GUIART (175).
 Domestic cat as final host for *Tenia echinococcus*, DÉVÉ (122).
 Human parasites, BILLINGHURST (26).
 Tracheal *Tenia echinococcus*, DÉVÉ (121).
 Prophylaxis for *Tenia echinococcus*, transmission, hosts, prevention, DÉVÉ (123).
 Origin of pearls, GIARD (158).

DISTRIBUTION.

Russia, n. spp., LINSTOW (267).
 Finland, fish parasites, SCHNEIDER (403).
 Roumania, frequent occurrence of *Bothriocephalus*, LEON (256).
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 Sicily, fish parasites, BARBAGALLO & DRAGO (18).
 Caspian Sea, n. sp., LINSTOW (267).
 Nile, n. sp., LINSTOW (267).
 West Africa, n. spp., LINSTOW (264).
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LINSTOW (260, 267), MACCALLUM (286), MACLAREN (287), MIRANDA RIBEIRO (309), OSBORN (341), PRATT (357), PRENANT (358), RENDALL (370), ROSS (381), RUGE (387), SCHNEIDER (402), SCOTT (412), THEOBALD (444), WORTH (477).]

GENERAL BIOLOGY.

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DISTRIBUTION.

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 Anatomy of *Filaria loa* and *F. diurna*, BRUMPT (57).
 Anatomy of several spp., CAMERANO (64–68).
 Anatomy of male and female *Ichthyonema grayi*, GEMMILL (154).
 Anatomy, occurrence and hosts of *Filaria bancrofti*, TANIGUCHI (441).
 Anatomy of the developing *Ancylostomum duodenale*, LOOSS (276).
 Structure of epithelium of the ovarian and spermatid ducts of *Ascaris*, SALA (390).
 Histology of the ganglion cells in *Ascaris*, GOLDSCHMIDT (168).
 Histology of Nematodes, GOLDSCHMIDT (167).
 Structure of the cell, ROHDE (376).
 Practical demonstrations of parasitology, GUIART (175).
 Parasites of higher animals, organs attacked, mode of infection, symptoms, anatomy and biology of parasite, HALL (183).
 Fish parasites, SCHNEIDER (404).
 New parasite from a pigeon, SALMON (392).
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 Parasites in the eyes of birds, RANSOM (362).
 Parasites of the *Culicidae*, DYÉ (128).
 Human parasites, BILLINGHURST (26).
 Child invaded by *Ascaris lumbricoides* at Budapest, CLARKE (87).

Mode of infection, KENNARD (229).

Mode of infection by *Filaria perstans*, BASTIAN (19, 20, 21).

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Toxicity of *Ascaridæ*, COSENTINO (105).

Tumours caused in dogs by *Spiroptera*, PORTA (354).

Ankylostomiasis in Cornish miners, HALDANE (180, 181, 182).

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Simultaneous occurrence of *Filariae* and malarial parasites in the blood, SELOUS (416).

Faunistic, ENTZ (132).

Affinities, and relationships, HUBRECHT (204).

DISTRIBUTION.

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Sicily, fish parasites, BARBAGALLO & DRAGO (18).

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Fez, case of filariasis, VERDON (458).

Egypt, plant gall diseases caused by *Heterodera radicola*, MOSSERI (324).

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Turkestan, n. spp., DADAY (109).

North America, n. sp., LINSTOW (267).

United States, n. sp. in a pigeon, SALMON (392).

Guatemala, n. sp., CAMERANO (64).

Patagonia, n. sp., MAN (291).

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- Ichthyonema grayi*, anatomy, GEMMILL, Tr. Soc. Glasgow vi (3), pp. 299-301.
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- Monkhystera labiata*, Turkestan, DADAY, Zool. Jahrb. Syst. xxi, p. 480, pl. xxvii, figg. 1-3, **n. sp.**
- Myenchus* **n. gen.** for *M. bothryophorus* **n. sp.** in muscle cells of *Nephelis vulgaris* (= *Herpobdella atomaria* Carena), anatomy, SCHUBERG, Verh. Ver. Heidelb. vii, pp. 629-632; *M. bothryophorus*, in muscle of *Nephelis*, SCHUBERG & SCHRÖDER, Zeitschr. wiss. Zool. lxxvi, pp. 409-421, pl. xxx : **n. spp.**
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- Syngamus lari*, in eyes of birds, anatomy, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, p. 43, fig. 38-40.
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- Trichina*, at Homburg, epidemic, SCHLEIP, Verh. Ges. deutsch. Naturf. 1904, ii, pp. 59-62.
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DISTRIBUTION.

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SYSTEMATIC.

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- Gigantorhynchus mirabilis*, in birds, MARVAL, Rev. Suisse Zool. xii, pp. 573–583, **n. sp.**

CHÆTOGNATHA.

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GENERAL BIOLOGY AND DISTRIBUTION.

- Phosphorescence phenomenon in the Indian Ocean, HERDMAN (192).
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SYSTEMATIC.

- Krohnia hamata*, Bay of Biscay, FOWLER, Nature lxix, p. 381.
- Sagitta*, connected with phosphorescence phenomenon in the Indian Ocean, HERDMAN, Rep. Brit. Ass. 1903–1904, pp. 695 & 696; *S. elegans*, *S. bipunctata*, ovogenesis, STEVENS, Zool. Jahrb. Anat. xxi, pp. 242–252, pl. xvi; *S. serratodentata*, Bay of Biscay, FOWLER, Nature lxix, p. 381.
- Spadella*, Iceland, PAULSEN, Medd. Komm. Havund. i, p. 40; *S.*, Scilly Isles, BROWNE, J. Inst. Cornwall xvi, 1, pp. 120–132.

ROTIFERA.

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GENERAL BIOLOGY.

- Asymmetry and its biological significance, JENNINGS (219).
 Summer plankton of the Neva, SKORIKOV (419).
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DISTRIBUTION.

- River Neva, lists of spp. found, SKORIKOV (419).
 Lake Baical, list of spp. found, YAKHONTOV (478).

- Scotland, collections, MURRAY (327).
 Manchester, n. sp., LORD (278).
 Norfolk, ponds, collections, HURRELL (206).
 Paris, n. sp., BEAUCHAMP (22).
 Lac de Bret, n. spp., LINDER (259).
 Plön, collections, ZSCHOKKE (482).
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SYSTEMATIC.

- Balatro anguiformis*, genera, from *Trichodrilus*, ISSEL, Arch. Zool. ii, 1, pp. 1-9, pl. 1, **n. sp.**
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Mastigocera blanci, Lac de Bret, LINDER, t. c. p. 238, fig. 7, **n. sp.**
Melicerta ringens, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 517, fig. 85.
Notops falcipes, Lac de Bret, LINDER, Rev. Suisse Zool. xii, p. 238, fig. 6, **n. sp.**
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Synchæta bicornis, Louisiana, anatomy, SMITH, Tr. Amer. Micr. Soc. xxv, pp. 121-126, pl. xviii, **n. sp.**

GASTROTRICHA.

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GENERAL BIOLOGY AND DISTRIBUTION.

- Bibliography for 1896, COLLIN (102).
 Plön, collections, ZSCHOKKE (482).
 France, Pas-de-Calais, n. sp., GIARD (159).
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SYSTEMATIC.

- Chætonotus marinus*, River Ambleteuse, Pas-de-Calais, GIARD, C.R. Soc. Biol. lvi, p. 1062, figg. 1-3, **n. sp.**
Philosyrtis **n. gen.** for *P. monotoides* **n. sp.**, River Ambleteuse, Pas-de-Calais, GIARD, t. c. p. 1065, fig. 2.
Zelinkia **n. gen.** for *Z. plana* **n. sp.**, River Ambleteuse, Pas-de-Calais, GIARD, t. c. p. 1063, fig. 1.

MESOZOA.

NERESHEIMER (331).

Lohmannella catenata, at Villafranca, NERESHEIMER, Zeitschr. wiss. Zool. lxxvi, pp. 137-166, pls. x & xi.

HEMICHORDA.

[The following memoirs relate to *Hemichorda*:—BENEDEN (456), BROWNE (54), CAULLERY & MESNIL (76), LONGCHAMPS (274), RITTER & DAVIS (375), SCHEPOTIEFF (398), SCHULTZ (409), SPENGEL (428-433).]

GENERAL BIOLOGY.

Anatomy of *Ptychodera* spp., SPENGEL (428-433).

Ecology, morphology, and speciology of the young of some Western North American Enteropneusta, RITTER & DAVIS (375).

Regeneration in *Phoronis*, SCHULTZ (409).

Development and anatomy, VAN BENEDEN (456).

DISTRIBUTION.

Heligoland, *Phoronis* n. sp., LONGCHAMPS (274).

SYSTEMATIC.

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Branchiostoma pelagicum, Florida, PARKER, t. c. p. 40, pl. i, figg. 1 & 2, **n. sp.**

Glossobolanus elongatus, Gulf of Naples, SPENGEL, Zool. Jahrb. Anat. xx, pp. 315-362, pls. xx-xxii, **n. sp.**

Heteropleuron agassiz, *H. parvum*, pp. 43 & 44, pl. ii, figg. 5 & 6, Florida, PARKER, Bull. Mus. Harvard xlv, 2, **n. spp.**

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P. mülleri, Heligoland, LONGCHAMPS, t. c. p. 9, pl. i, **n. sp.**

Protobalanus **n. n.** for *Bolanocephalus koehleri* Caull. and Mesn., CAULLERY & MESNIL, Zool. Jahrb. Anat. xx, pp. 227-256, pls. xii & xiii.

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T. hubbardi, Western North America, morphology and ecology, RITTER & DAVIS, t. c. p. 198, pls., **n. sp.**

XVI. CŒLEENTERATA.

By

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CONTENTS.

	Page		Page
INTRODUCTION	1	IV. SCYPHOZOA :—	
TITLES	3	A. Subject Index :—	
I. GENERAL (= <i>Cœlenterata</i> collectively)	15	General Biology	24
Subject Index :—		Geography	24
General Biology	16	B. Systematic	24
Geography	16	V. ANTHOZOA (including <i>Alcyonaria</i> and <i>Zoantharia</i>) :—	
II. HYDROMEDUSAE (including <i>Hydrocorallina</i> and <i>Siphonophora</i>) :—		A. Subject Index :—	
A. Subject Index :—		General Biology	25
General Biology	16	Geography	25
Geography	17	B. Systematic	26
B. Systematic	17	VI. CTENOPHORA :—	
III. GRAPTOLITHIDA :—		A. Subject Index :—	
A. Subject Index :—		General Biology	35
General Biology	22	Geography	35
Geography	22	B. Systematic	35
B. Systematic	22		

INTRODUCTION.

THE output of Cœlenterate literature this year is thoroughly satisfactory both as regards the number of memoirs and also from the point of view of the interest of the work published. There are ten more titles recorded this year than last, and most branches of the subject are well represented.

There are several very good morphological contributions this year by DUERDEN (49-52); he discusses septal sequence in the *Madreporaria*, and also the development and relationships of the rugose corals. The

Craspedote medusa, *Olinthias*, and some of its allies forms the subject of a paper by GOTO (79), and GRAVIER (81) describes a pelagic Cerianthe from the Gulf of California, *Dactylactis benedeni* n. sp. HARGITT (94) adds to Hydroids a new species from Long Island Sound; in a second paper he deals with some *Hydromedusæ* from the Bay of Naples. There is a monograph by JUNGENSEN (125) on the *Pennatulidæ*, and JANOVER (122) has devoted much work to the study of the genus *Solenocaulon*. NUTTING'S (170) monograph on the *Sertularidæ* of America has appeared during the year, and TORREY (209, 210) has reported on the *Hydroids* and *Utenophora* of the San Diego region. Additions are made by VERRILL (220-225) to the *Anthozoa* and *Hydrozoa* of the Bermudas, West Indies and Brazil; he also has published some notes on the genus *Acropora*. The faunistic work of the year includes MAYER'S (155) paper on the Medusæ of the Bahamas, and McMURRICH'S (157) on the Actiniæ of the Plate Collection. HINDE (104) writes on the structure and affinities of the genus *Porosphaera*, and KINGSLEY (128) on *Cerianthus borealis*. From Japan (KISHINOUE (130)) we have some useful notes on the natural history of corals, and KITAHARA (131) reports on the coral fishery of Japan. The results of the dredging operations on the West Coasts of Central America and California have been given by MARENZELLER (152), and include a description of a new species of symbiotic Hydrocoralline. SWENANDER (206) describes the athecous Hydroids from Drontheim Fiord, and THOMSON (210) has a note on the gonostyles of two Antarctic *Siphonophora*. Hydroids collected in various parts of the world (outside Europe) are described by JÄDERHOLM (118) from the Swedish National Museum; he also has written on the Hydroids collected by the Swedish Antarctic Expedition of 1901-1903. DENNANT'S (35-38) four papers are descriptive of Australian recent and fossil forms; he gives many new species from the Australian Tertiaries.

There is a physiological paper by PRATT (177) on the assimilation and distribution of nourishment in *Alecyonium digitatum*. KREMPF (136) has noticed a transformation of the tentacle apparatus in certain species of *Madreporaria*. A chapter on Coral-reefs occurs in BRANNER'S (17) work on the stone corals of Brazil, while CROSSLAND (29) has studied the coral formations of Zanzibar and East Africa.

Matters of a wider biological interest are to be found in HUBRECHT'S (109, 110) papers on the relationships of various invertebrate phyla, of Annelids and Chordates, of Ctenophores and Platyhelminths. This is also touched upon by MICHAELSEN (159), and JENNINGS (123) work is upon asymmetry in certain lower organisms and its biological significance.

There are many papers again on regeneration and regulation. BORING (16) writes upon the closure of the longitudinally split Tubularian stems. CARLGREN'S (20) work on the correlation between regeneration and symmetry in Actiniæ is perhaps some of the most important that has appeared in this field of work this year. CHILD (24, 25) has written on form-regulation in *Cerianthus*, and GODLEWSKI (75) in *Tubularia mesembryanthemum*, while KING (127) did somewhat similar experiments on *Tubularia crocea*. HARGITT (93, 95) has published a note on regeneration in *Scyphomedusæ* and also on the budding tentacles of *Gonionemus*. It has been found, by LOEB (144), that sea-water has much influence on the regeneration and growth of Tubularians. MORGAN (162, 163) continues his work on regeneration and gives an analysis of organic polarity. YERKES (238) writes on the reaction time of *Gonionemus murbachii*. SCHULTZ (200, 201) also writes on regeneration. TORREY'S (208) work is on the habits and reactions, regeneration and non-sexual reproduction of *Sagartia davisii*. BILLARD (12) contributes to the study of multiplication, regeneration, grafting and variations in Hydroids, and DAVENPORT (34) discusses the variation in the stripes on the sea-anemone *Sagartia lucia*.

Cytologists will be interested in GORICH's (76) memoir on spermatogenesis in Sponges and *Cælayerata*. GUENTHER (84) has carried on an allied enquiry in *Hydra viridis*; RETZIUS (183) too has worked on this subject. SCHNEIDER (199) has written an interesting note on the origin of the genital cells of Ctenophores.

Paleontological contributions are numerous. BOGATIREW (14) adds a new genus and six new species of Devonian forms from the Ural district. ELLES & WOOD (54) have now added another part to their monograph on British Graptolites. Graptolites from Sweden are described by HOLM (105, 106) and some new species from New York are recorded by RUEDEMANN (196), while HALL (87, 88) reports on those of Victoria. Swedish geological notes by HUENE (112) include a description of a medusa from the lower Silurian. FELIX (58-61) has given three memoirs on fossils from Egypt and also from the Jura region. Paleozoic corals are discussed by GRABAU (80).

Embryology is represented by some very good work this year. Students of this subject will be interested in HARGITT's (91, 92) papers on the early development of *Eudendrium* and *Pennaria tiarella*. RUEDEMANN (195) describes the mode of growth and development of *Goniograptus thureaui*, and WOLTERECK (233) has followed the development of *Veella*.

ERRATA.

In Zool. Rec. 1903, p. 19, for *Turbularia* read *Tubularia*.

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I. GENERAL

(i.e. works relating to *Cælenterata* collectively).

[The following memoirs refer to *Cælenterata* collectively:—CARLGRÉN (21), CAULLERY & MESNIL (23), GINESTE (73), HICKSON (101), HUBRECHT (109), HUDLESTON (111), LAUTERBORN (140), LUTHER (147), MICHAELSEN (159), ROHDE (187).]

SUBJECT INDEX (to General).

GENERAL BIOLOGY AND GEOGRAPHY.

Review of literature for 1894, CARLGREN (21).

Histology, structure of the cell, ROHDE (187).

Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (73).

Organogenesis and histogenesis from the point of view of phylogeny, GINESTE (73).

Variation and regeneration, HICKSON (101).

Affinities of *Cœlenterata* discussed, MICHAELSEN (159).

Cœlenterate affinities to the *Actinomysidæ*, CAULLERY & MESNIL (23).

Relationships of invertebrates, HUBRECHT (109).

Finland, plankton collections, LUTHER (147).

Upper Rhine, collections, LAUTERBORN (140).

II. HYDROMEDUSÆ (or HYDROZOA).

[The following memoirs relate to *Hydromedusæ*:—ANNANDALE (7), BANCROFT (9), BILLARD (12, 13), BOGATIREW (14), BORING (16), BROWNE (18), CHILD (24), DADAY (31), GILSON (72), GODLEWSKI (75), GÖRICH (76), GORKA (77), GOTO (79), GRAVIER (82), GUENTHER (84), HARGITT (90-95), HARTLAUB (96), HOLMGREN (108), HURRELL (115), ISELER (117), JÄDERHOLM (118, 119), JENNINGS (123), JUKES-BROWNE (124), KING (127), LOEB (144), LOPPENS (145, 146), MARTIN (153), MAYER (154, 155), MAXWELL (156), MOORE (160), MORGAN (162, 163), NOBRE (166, 167), NUTTING (169, 170), PARKES (173), PERKINS (174, 175), SCHEPOTIEFF (198), SCHULTZ (200, 201), SWENANDER (206), THOMSON (207), TORREY (209), TRUE (214), ULRICH & VAUGHAN (216), VERRILL (220), VOLZ (227), WOLTERECK (233), YERKES (238), MARINE BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY.

Morphology of *Hydromedusæ*, PERKINS (174).

Histology of cylindrical epithelial cells, HOLMGREN (108).

Comparative study of muscular tonus, MAXWELL (156).

Asymmetry and its significance, JENNINGS (123).

Double reproduction in the medusa, *Hybocodon prolifera*, PERKINS (175).

Reaction time of *Gonionemus murbachii* to electric and photic stimuli, Biol. Bull. vi, pp. 84-95 & 324.

Artificial sea-waters as tested on *Gonionemus* in aquaria, TRUE (214).

Regeneration in *Tubularia* and *Hydra*, SCHULTZ (201).

Regeneration, MORGAN (163).

Regeneration in *Tubularia*, MORGAN (162).

Influence of the reaction of sea-water on regeneration and growth of Tubularians, LOEB (144).

Regeneration in *Tubularia crocea*, KING (127).

Closure of longitudinally split stems in *Tubularians*, BORING (16).

Regulation experiments in *Tubularia mesembryanthemum*, GODLEWSKI (75).

Multiplication, regeneration, graftings and variation, BILLARD (12).

Form-regulation, CHILD (24).

- Budding tentacles of *Gonionemus*, HARGITT (95).
 Spermatogenesis in *Hydra*, GUENTHER (84).
 Development of the hydranth, BILLARD (13).
 Development of *Eudendrium*, HARGITT (91).
 Development of *Veleva*, WOLTERECK (233).

GEOGRAPHY.

- Antarctic regions, n. spp., JÄDERHOLM (119).
 Antarctic *Siphonophora*, THOMSON (207).
 Norway, collections, HARTLAUB (96).
 Drontheim, collections, SWENANDER (206).
 Azores, collections, JÄDERHOLM (119).
 †Ural, Devonian forms, BOGATIREW (14).
 †England, upper chalk, Cretaceous forms, JUKES-BROWNE (124).
 Plymouth, n. spp., BROWNE (18).
 Cork coast, *Veleva spiralis*, MARTIN (153).
 Belgium, collections, LOPPENS (145).
 †Bohemia, faunistic, ISERLE (117).
 Bay of Naples, n. spp., HARGITT (90).
 North and South Portugal, marine fauna, NOBRE (166, 167).
 Madeira, South Atlantic, South Africa, n. spp., JÄDERHOLM (118).
 Africa, Lakes Tanganyika and Victoria Nyanza, occurrence of jelly-fish, MOORE (160).
 Victoria Nyanza, *Limnocyda* spp., GRAVIER (82).
 American *Sertulariæ*, monograph, NUTTING (170).
 †Maryland, n. spp., ULRICH & VAUGHAN (216).
 †Hudson Bay Slope, Devonian rocks, n. gen., n. sp., PARKES (173).
 Long Island Sound, n. sp., HARGITT (94).
 California, collections, JÄDERHOLM (118).
 San Diego, n. spp., TORREY (209).
 Valparaiso, Brazil, Patagonia, Straits of Magalhaen, collections, JÄDERHOLM (118).
 Indian Seas, occurrence of *Porpita*, ANNANDALE (7).
 Indian Ocean, India, Antilles, Java, n. spp., JÄDERHOLM (118).
 Bahamas, medusæ, n. gen. and sp., MAYER (154).
 Bahamas, the medusa fauna, MAYER (155).
 Bermudas, n. spp., VERRILL (220).
 Japan, n. spp., GOTO (79).
 South Japan, Hongkong, n. sp., JÄDERHOLM (118).
 †Sumatra, n. sp., VOLZ (227).
 Hawaiian Islands, gymnoblastic hydroids, NUTTING (169).

SYSTEMATIC.

- Hydroids*, gynoblastic forms from the Hawaiian Islands, NUTTING, Science xix, p. 217.
Abietinaria abietina, p. 114, pl. xxxii, figg. 1-3, *A. variabilis*, p. 115, figg. 4-7, *A. inconstans*, p. 116, pl. xxxiii, figg. 1 & 2, *A. coli*, p. 117, figg. 3-5, *A. filicula*, p. 117, pl. xxxiv, fig. 1, *A. traski*, p. 118, pl. xxxiii, figg. 6-11, *A. anguina*, p. 119, pl. xxxiv, figg. 5-7, *A. compressa*, p. 120, pl. xxxv, figg. 3 & 4, *A. greenei*, p. 121, pl. xxxvi, figg. 1-8, *A. costata*, p. 122, pl. xxxvi, figg. 9-12, *A. annulata*, p. 122, figg. 13-15, *A. turgida*, pl. xxxvii, figg. 1 & 2, *A. gigantea*, p. 123, figg. 3-5, NUTTING, Special Bull. U. S. Mus. 1904.

- A. amphora*, p. 119, pl. xxxiv, figg. 2-4, *A. alexanderi*, p. 120, pl. xxxv, figg. 5-8, NUTTING, t. c. **n. spp.**
- Aglaophenia cylindrata*, Antilles, JÄDERHOLM, Arkiv Zool. i (3), p. 297, pl. xiv, fig. 2.
- A. heterodonta*, S. Africa, p. 296, pl. xiii, figg. 10-12, pl. xiv, fig. 1, *A. antarctica*, Straits of Magalhaen, p. 295, pl. xiii, figg. 8 & 9, JÄDERHOLM, t. c. **n. spp.**
- Aglaura hemistoma*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 26, pl. iv, fig. 34.
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- S. megastoma*, p. 90, pl. xx, figg. 8 & 9, *S. complexa*, p. 94, pl. xxi, figg. 5-9, *S. meridionalis*, p. 98, pl. xxiii, figg. 8 & 9, *S. elegans*, p. 98, pl. xxiv, fig. 1, *S. minuta*, p. 99, pl. xxiv, figg. 9 & 10, *S. levinseni*, p. 100, pl. xxvi, figg. 1 & 2, *S. magna*, p. 103, pl. xxvii, fig. 1, *S. hartlaubii*, p. 104, pl. xxvii, fig. 5, NUTTING, Special Bull. U. S. Mus. 1904: **n. spp.**
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- Thuiaria thuja*, p. 62, pl. vii, figg. 1-3, *T. elegans*, p. 64, pl. vii, fig. 4, *T. robusta*, pl. viii, figg. 5-7, *T. thuiaroides*, figg. 1-6, *T. polycarpa*, p. 65, figg. 7-9, *T. kurilæ*, pl. ix, figg. 1 & 2, *T. lonchitis*, p. 66, figg. 5-8, *T. plumulifera*, p. 67, figg. 9-13, *T. diffusa*, p. 68, pl. x, figg. 1-3, *T. similis*, p. 69, figg. 7-9, *T. tubuliformis*, p. 70, pl. xi, figg. 1-8, *T. tenera*, figg. 9-12, *T. fabricii*, p. 71, pl. xii, figg. 1 & 2, *T. argentea*, p. 71, fig. 3-9, *T. cupressina*, p. 72, pl. xiii, figg. 1-3, NUTTING, Special Bull. U. S. Mus. 1904.
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Veleva, development, WOLTERECK, Zool. Jahrb. Suppl. vii, pp. 347-372, pls. xvii-xix, 6 figg.; *V. spiralis*, on the Cork Coast, MARTIN, Irish Natural. xiii, p. 27.
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Zygodactyla cyanea, Bahamas, MAYER, t. c. p. 17, pl. iii, figg. 26 & 27.
Zygophylax operculata, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), pp. 276-278, pl. xii, figg. 7 & 8, n. sp.

III. GRAPTOLITHIDA.

[The following memoirs refer to *Graptolithida*:—ELLES (53), ELLES & WOOD (54), HALL (87, 88), HOLM (105, 106), ISELE (117), LAMPLUGH (138), MALAISE & LESPINEUX (150), NOËL (168), ROESINGER (186), ROUSSEL (193), RUEDEMANN (195, 196, 197), USSING (217), WOOD (235).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

- +Mode of life, ROESINGER (186).
- +Mode of growth and development of *Goniograptus thureauvi*, RUEDEMANN (195).
- +Swedish forms, list of spp. found, HOLM (105).
- +Swedish forms, HOLM (105).
- +Britain, n. spp., history of forms, synonymy, and anatomy, ELLES & WOOD (54).
- +Belfast, spp. found, LAMPLUGH etc. (138).
- +Wales, Arenig Rocks, lists of spp. found and localities, ELLES (53).
- +Lower Ludlow shales, spp., WOOD (235).
- +Denmark, spp. found, USSING (217).
- +Grès Vosgien, Epinal, graptolite fauna, NOËL (168).
- +France, collections, MALAISE & LESPINEUX (150).
- +Pyrenees, collections, ROUSSEL (193).
- +New York, Trenton conglomerate, fauna, RUEDEMANN (197).
- +New York County, spp., RUEDEMANN (196).
- +Victoria, collections, HALL (88).
- +Eastern Victoria, n. spp., HALL (87).

SYSTEMATIC.

- +*Bryograptus* n. sp. [unnamed], RUEDEMANN, Rep. N. York Mus. lv, p. 556; +*B.* New York, RUEDEMANN, t. c. p. 554 (name only), n. sp.
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- +*D. angulatus*, Britain, ELLES & WOOD, t. c. p. 149, pl. xxi, fig. 4, **n. sp.**
- +*Dicranograptus clingani*, p. 165, pl. xxiv, fig. 1, *D. tardiusculus*, p. 167, fig. 2, *D. rectus*, p. 160, fig. 4, *D. nicholsoni*, p. 171, pl. xxv, fig. 1, *D. ramosus*, p. 167, pl. xxiv, fig. 6, *D. ziczac*, p. 177, pl. xxv, fig. 3, *D. furcatus* var. *minimus*, p. 179, pl. xxv, fig. 4, Britain, ELLES & WOOD, t. c.
- +*D. brevicaulis*, p. 168, pl. xxiv, fig. 3, *D. celticus*, p. 170, pl. xxiv, fig. 5, *D. cyathiformis*, p. 174, pl. xxv, fig. 2, Britain, ELLES & WOOD, t. c. **n. spp.**
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- +*Cænograptid* **n. gen.** and **n. sp.** [unnamed], RUEDEMANN, t. c. p. 566.
- +*Cænograptus gracilis*, mode of growth, RUEDEMANN, t. c. p. 583, fig. 13.
- +*Cyrtograptus murchisoni*, USSING, Danmarks geol. Unders. ii, 2, p. 59, fig. 18.
- +*Glossograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, pp. 571 & 555; *G. hermani*, Victoria, HALL, Rec. geol. Surv. Victoria i, 1, p. 34, fig. 2, **n. sp.**
- +*Goniograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, p. 556.
- +*G. thureauvi*, mode of growth and development, RUEDEMANN, t. c. pp. 576–592, 19 figg.
- +*Graptolithus* **n. sp.** unnamed, ISERLE, SB. Bohmisch. Ges. 1903, xxix, p. 7.
- +*Leptograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, p. 570.
- +*Monograptus leptotheca*, p. 61, fig. 56, *M. priodon*, p. 63, fig. 59, HOLM, Sveriges geol. Unders. Afh. 172; *M. bohemicus*, *M. nilssoni*, *M. priodon*, France, MALAISE & LESPINEUX, Ann. Soc. geol. Belgique xxxi, 3, pp. 140 & 141; +*M. spp.*, Lower Ludlow Shales, WOOD, P. Geol. Ass. xviii (9), pp. 446–451.
- +*Phyllograptus angustifolius*, HOLM, Sveriges geol. Unders. Afh. 172, p. 37, fig. 31; *P. ilicifolius*, mode of growth, RUEDEMANN, Rep. N. York Mus. lv, p. 590, fig. 19.
- +*Ptilograptus* sp., HALL, Rec. geol. Surv. Victoria i, 3, fig. 2.
- +*Rastrites peregrinus*, USSING, Danmarks geol. Unders. ii, 2, p. 58, fig. 4.
- +*Retiolites* spp., Lower Ludlow Shales, WOOD, P. Geol. Ass. xviii (9), pp. 446–451; *R. glinitzianus*, HOLM, Sveriges geol. Unders. Afh. 172, p. 62,

fig. 58; *R. glinitziannus*, USSING, Danmarks geol. Unders. ii, 2, p. 58, fig. 5.

+*Tetragraptus quadribachiatus*, *T. fruticosus*, HOLM, Sveriges geol. Unders. Afh. 172, p. 39, figg. 33 & 34; *T. fruticosus*, p. 588, figg. 15 & 16, *T. bigsbyi*, p. 590, fig. 18, mode of growth, RUEDEMANN, Rep. N. York Mus. lv.

IV. SCYPHOZOA.

[The following memoirs refer to *Scyphozoa*:—GILSON (72), GÖRICH (76), HARGITT (93), HUENE (112), MAYER (154), NOBRE (166, 167), RETZIUS (183).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

Regeneration in *Scyphomedusæ*, HARGITT (93).

Spermatogenesis in *Aurelia aurita*, GÖRICH (76).

+Sweden, lower Silurian forms, HUENE (112).

North and South Portugal, marine fauna, NOBRE (166, 167).

Bahamas, medusæ, MAYER (154).

SYSTEMATIC.

Scyphomedusæ, regeneration, HARGITT, Amer. Natural. xxxviii, pp. 517-519.
Aurelia aurita, spermatogenesis, GÖRICH, Zeitschr. wiss. Zool. lxxvi, pp. 522-543, pl. xxxi.

Cyanea capillata, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 28, pl. xiii, figg. 1-3.

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Tamoya haplonema, adult and young, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 28, pl. vii, figg. 61-64.

V. ANTHOZOA.

[The following memoirs refer to *Anthozoa*:—ABRIC (5), BEMMELEN (11), BOGATIREW (14), BOLTON (15), BRANNER (17), BROWNE (18), CAPEDE (19), CARLGREN (20), CARY (22), CHILD (24 & 25), COOK (27), COUFFON (28), CROSSLAND (29), DACQUÉ (30), DAINELLI (32 & 33), DAVENPORT (34), DENNANT (35 & 38), DESTINEZ (39-44), DIENER (46), DOLLFUS (47), DUERDEN (49-52), ETHERIDGE (56), FELIX (58-61), FOERSTE (62 & 63), FORREST (64), FOURTEAU (65), FOX (66), FOX-STRANGWAYS (67), GARDINER (68-71), GILSON (72), GIRTY (74), GORKA (77), GRABAU (80), GRAVIER (81), GREGORY (83), GUPPY (85), GÜRICH (86), HALL (87), HARGITT (92), HEICKE (99), HICKSON (100 & 101), HINDE (103), HOLMES (107), HUNTER (113), JAHN (120), JANENSCH (121), JANOVER (122), JUKES-BROWNE (124), JUNGENSEN (125), KINGSLEY (128), KINKELIN (129), KISHINOUE (130), KITAHARA (131), KNIPOWITSCH (133), KOFORD (134), KREMPF (136), KÜKENTHAL (137), LAWSON (141), LHOMME (142), MARENZELLER (152), MAYER (154), McMURRICH (157), MORGAN (161), MUNTHE (164), NOBRE (166 & 167), D'OSSAT (171), POLÉNOFF (176), PRATT (177), REMES (180), RENZ (182), RETZIUS (183), RICHE (184), RICHET (185), ROULE (189-192), ROUSSEL (193), ROWE (194), RUEDEMANN (197), SCHEPOTIEFF (198), SMYČKA (203), SOBOLEW (204), TORREY (208 & 211), TOULA (212), TRINCI (213), TRUE (214), ULRICH & VAUGHAN (216), VAUGHAN (219), VERRILL (220-225), VOLZ (227), WALTHER (228), WHITEAVES (230), WOOD (235), YAKOVLEVA (237), ZELIZKO (240), MAR. BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY.

- Morphology and development of recent and fossil corals, DUERDEN (49).
 Morphology of the *Madreporaria*, septal sequence, DUERDEN (51).
 Morphology and morphogeny of the rugose corals, YAKOVLEVA (237).
 Structure and growth of corals, MORGAN (161).
 Anatomy, adult colony, larva, young polyp, *Siderastrea radians*, DUERDEN (52A).
 Anatomy of the genus *Acropora*, with descriptions of new species, VERRILL (225).
 Structure and affinities of *Porosphaera*, HINDE (103).
 †Anatomy of n. gen. & sp. *Paronipora penicillata*, CAPEDE (19).
 Notes on a peculiar larva, probably of *Amophyllactis* sp., CARY (22).
 Polymorphism in *Pennatulida*, HICKSON (100).
 Septal sequence in *Siderastræa*, DUERDEN (50).
 Artificial sea waters as tested in aquaria on *Metridium*, TRUE (214).
 Chemical composition of some Gorgonian corals, COOK (27).
 Poison of *Actinæ*, RICHET (185).
 Chemical action of nematoblast alone explains functioning of nematocyst, ABRIC (5).
 On the habits and reactions of *Sagartia davisi*, TORREY (211).
 Assimilation and nutriment in *Alcyonium digitatum*, PRATT (177).
 Reactions to temperature and geotropism on *Mnemiopsis*, HUNTER (113).
 Variation in the stripes of *Sagartia lucia*, DAVENPORT (34).
 Transformation of dorsal tentacle, *Madreporinæ* and *Oculinæ*, KREMPF (136).
 Regeneration and non-sexual reproduction in *Sagartia davisi*, TORREY & MERY (211).
 Form-regulation in *Cerianthus*, CHILD (24 & 25).
 Correlation between regeneration and symmetry, CARLGREN (20).
 Formation of coral reefs, GARDINER (70).
 Coral reefs, FORREST (64).
 †Paleozoic coral reefs, GRABAU (80).
 Development and affinities of the *Tetracoralla*, DUERDEN (52).
 Maturation, fertilization, early cleavage, formation of ectoderm and endoderm in *Pennaria tiarella*, HARGITT (92).
 Variations and nomenclature of corals from Bermudas, West Indies and Brazil, VERRILL (223).
 Classification, ROULE (189).
 Classification; position of *Antipathariæ*, ROULE (190).
 Basis of classification and variation in corals, GARDINER (69).

GEOGRAPHY.

- Various stations, corals, Valdivia Exp., MARENZELLER (152A).
 Iceland, Greenland, Færoe Islands, *Pennatulidæ*, JUNGENSEN (125).
 †Tomsk, collections, POLÉNOFF (176).
 †Ural, Devonian forms, 6 n. spp., 1 n. gen., BOGATIREW (14).
 †Jura chalk, n. spp., FELIX (61).
 †Krakau, Devonian collections, GÜRICH (86).
 †Gotland, Silurian, list of spp. found, MUNTHE (164).
 †Devonian forms, SMYČKA (203).
 †England, upper chalk, Cretaceous forms, JUKES-BROWNE (124).
 †Surrey, collections, HOLMES (107).

- +Scarborough, Oolitic and Cretaceous forms, FOX-STRANGWAYS (67).
- +Lancashire coal measures, spp. found, BOLTON (15).
- +Avon section, corals, VAUGHAN (219).
- +Cornwall, north coast forms, FOX (66).
- +Solenhofen, fauna, WALTHER (228).
- +Central Bohemia, 3 spp. from the Upper Silurian, ZELIZKO (240).
- +Eastern Bohemia, Chalk fossils, JAHN (125).
- +Corniche Alps, Paleozoic forms, n. spp., D'OSSAT (171).
- +South Dalmatia, collections, RENZ (182).
- +Dalmatia, n. spp., DAINELLI (32).
- +Dalmatia, Eocene fossils, DAINELLI (33).
- +Silistria, collections, TOULA (212).
- +Pyrenees, collections, ROUSSEL (193).
- +Portugal, n. spp., FELIX (59).
- North and South Portugal, marine fauna, NOBRE (166 & 167).
- +Egypt, Cretaceous, FOURTEAU (65).
- +Egypt, tertiary, FELIX (60).
- Red Sea, n. spp., KÜKENTHAL (137).
- +Somaliland, collections, DACQUÉ (30).
- Zanzibar and East Africa, coral formations, CROSSLAND (29).
- +New York, Trenton conglomerate, fauna, RUEDEMANN (197).
- +New York, limestone fossils, WOOD (235).
- +Maryland, n. spp., ULRICH & VAUGHAN (216).
- +Southern Indiana, collections, FOERSTE (62).
- +Colorado, Carboniferous, n. sp., GIRTY (74).
- +Tennessee and Kentucky, collections, FOERSTE (63).
- +Manitoba, Silurian, n. gen. & n. sp., described, WHITEAVES (230).
- +Southern Indiana, list of Silurian corals, FOERSTE (62).
- Mexico and Central America, n. spp., MARENZELLER (152).
- Gulf of California, n. sp., GRAVIER (81).
- +California, fossil corals, LAWSON (141).
- Brazil, coral reefs, BRANNER (17).
- Chili, n. spp., McMURRICH (157).
- Japan, coral fishery, KITAHARA (131).
- Bermudas, n. spp., VERRILL (221).
- Bermudas, West Indies and Brazil, n. spp., VERRILL (222).
- Bahamas, medusæ, MAYER (154).
- Indian region, coral reefs, GARDINER (69).
- +Sumatra, n. spp., VOLZ (227).
- +Australian Tertiaries, n. spp., DENNANT (35).
- South Australia and Victoria, recent corals, n. spp., DENNANT (36).
- +Queensland and Western Australia, fossil fauna, GREGORY & DAINTREE (83).
- +Victoria, list of fossils, p. 304, HALL (87).

SYSTEMATIC.

- Anthozoa*, classification, ROULE, Bull. Mus. Monaco 1904, 16, 3 pp.
- Acroporidae* n. fam. for *Acropora muricata*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 165, pl. xxxii, fig. 1.
- Acropora acervata*, p. 220, pl. xxxvi, fig. 17, pl. xxxvi, B, fig. 8, *A. appressa*, p. 222, pl. xxxvi, D, fig. 4, E, fig. 4, *A. austera*, p. 226, pl. xxxvi, fig. 10, B, fig. 1, *A. diffusa*, *A. digitifera*, *A. effusa*, pp. 228 & 229, pl. xxxvi, figg. 12, 16, C, fig. 2, F, fig. 16, B, fig. 3, B, fig. 7, *A. microphthalma*, p. 232, C, fig. 1, F, fig. 15, *A. proluxa*, p. 237, pl. xxxvi, fig. 3, A, fig. 3, F, fig. 14, *A. tubigera*, p. 239, pl. xxxvi, figg. 1 & 2, A, figg. 1 & 2, F, fig. 8, *A. tumida* p. 241, pl. xxxvi, fig. 11, B, fig. 2, F, fig. 3, *A. turbinata*,

- p. 242, pl. xxxvi, fig. 6, A, fig. 6, F, fig. 2, *A. secale*, p. 244, pl. xxxvi, fig. 14, B, fig. 5, *A. pumila*, p. 250, pl. xxxvi, fig. 5, A, fig. 5, D, fig. 9, *A. striata*, p. 251, pl. xxxvi, fig. 4, A, fig. 4, F, fig. 7, *A. symmetrica*, p. 254, pl. xxxvi, fig. 8, A, fig. 8, *A. acuminata*, p. 260, *A. ehrenbergii*, pl. xxxvi, D, figg. 5 & 6, E, figg. 2 & 3, F, fig. 11, Bermudas, VERRILL, Tr. Connect. Ac. xi (1); *A.*, composition, with descriptions of new species, VERRILL, t. c. pp. 207–266, 6 pls.
- A. dissimilis*, p. 226, pl. 36, fig. 9, pl. 36, A, fig. 9, *A. indurata*, *A. luzonica*, pp. 230 & 231, pl. 36, figg. 19, 36, C, figg. 4, 6, F, figg. 12, 9, *A. pachycyathus*, p. 236, pl. 36, fig. 20, C, fig. 5, F, fig. 6, *A. stellulata*, p. 238, pl. 36, C, fig. 3, F, p. 10, *A. bandensis* **n. n.** for *Madrepora tubigera* Quelch, p. 241. *A. secaloides*, *A. fraterna*, *A. wardii*, pp. 244–248, pl. 36, figg. 13, 15, 18, B, figg. 6, 9, 4, F, fig. 4, *A. neglecta*, p. 250, pl. xxxvi, fig. 21, *A. urceolifera*, p. 251, D, fig. 3, *A. cytherella*, p. 253, pl. 36, fig. 7, *A. paniculata*, p. 259, pl. 36, D, figg. 7, 10, Bermudas, VERRILL, t. c.
- †*Actinacis remeši*, structure, FELIX, Vestnik. Klub. Prostejove 1904, vi, p. 110, 2 figg., **n. sp.**
- Actinie*, correlation between regeneration and symmetry, CARLGREN, Svenska Ak. Handl. xxxvii, 8, 105 pp., 11 pls., 23 text-figg.; *Actinie*, poison of, RICHET, C.R. Soc. Biol. lvi, pp. 302 & 303.
- A. melanaster*, Bermudas, VERRILL, op. cit. xi (1), p. 51, pl. vi, figg. 2 & 3, **n. sp.**
- Actinia equina*, functioning of nematocysts, ABRIC, C.R. Soc. Biol. lvi, pp. 1008–1010; *A. bermudensis*, VERRILL, Tr. Connect. Ac. x (2), p. 558, pl. lxvii, fig. 7.
- Actinoides pallida*, VERRILL, op. cit. x (2), p. 558, pl. lxviii, fig. 4.
- Actinostola chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 247, figg. 30–33, **n. sp.**
- Actinotryx sancti-thomæ*, VERRILL, Tr. Connect. Ac. x (2), p. 555, pl. lxviii, fig. 5.
- Agarcia fragilis*, p. 142, pl. xxvi, fig. 1, *A. agaricites*, p. 146, pl. xxvi, figg. 2 & 3, pl. xxvii, figg. 1–3, 5–7, *A. purpurea*, p. 149, pl. xxvii, fig. 4, Bermudas, VERRILL, op. cit. xi (1).
- A. crassa*, p. 145, pl. xxx, fig. 6, pl. xxxiv, fig. 2, *A. nobilis*, p. 150, pl. xxviii, figg. 1 & 2, Bermudas, VERRILL, t. c. **n. spp.**
- Aiptasia tagetes*, VERRILL, t. c. p. 49, pl. vi, fig. 6; *A. annulata*, *A. tagetes*, Bermudas, VERRILL, op. cit. x (2), pp. 556 & 557, pl. lxviii, fig. 3, pl. lxvii, fig. 2.
- Alcyonium fulvum* (= *Sympodium* Forsk.), KÜKENTHAL, Denk. Ges. Jena 1904, p. 41; *A. digitatum*, assimilation and nutriment, PRATT, Rep. Brit. Ass. 1903–1904, pp. 688 & 689.
- †*Alveolites suborbicularis*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 101, figg. 15–17.
- †*Alveopora cretacea*, Portugal, FELIX, Comm. geol. Portugal v, p. 380, **n. sp.**
- Amophyllactis* (?), notes on peculiar larva of, CARY, Biol. Bull. vii, pp. 75–78, 4 figg.
- Amphihelia oculata*, p. 308, pl. xiv, fig. 1, MARENZELLER, Ergebn. Valdivia iii.
- Anemonia elegans*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 50, pl. vi, fig. 4, **n. sp.**
- Anisopsammia* **n. g.** for *Amphihelia rostrata* Pourtal., p. 314, pl. xviii, fig. 23, MARENZELLER, Ergebn. Valdivia iii.
- Anthelia fuliginosa* (= *Sympodium fuliginosum* Ehrb. = *S. purpurascens* Ehrb. = *Anthelia glauca* Ehrb. = *A. strumosa* Ehrb.), KÜKENTHAL, Denk. Ges. Jena 1904, pp. 43–47.
- Anthepis ocellata*, Chili, anatomy, McMURRICH, Zool. Jahrb. Suppl. iii, 2, Fauna Chilensis, p. 264, figg. 45–47.

- †*Aphyllostylus* **n. gen.** for *A. gracilis* **n. sp.**, Manitoba, Silurian, WHITEAVES, Ottawa Natural. xviii, pp. 113 & 114.
- †*Aplosmilia euteiches*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 179, pl. xvii, fig. 7, **n. sp.**
- Asteroseris planulata*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 156, pl. xxvii, fig. 8.
- †*Astrangia* (*Cenangia*) *conradi*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 442, pl. cxxv, figg. 1 & 2, **n. sp.**
- †*A. lineata*, Maryland, VAUGHAN, t. c. p. 441, pl. cxxiv, figg. 1-4.
- †*Astrhelia palmata*, Maryland, VAUGHAN, t. c. p. 439, pl. cxxiii, figg. 1-4.
- †*Astrocenia subornata* var. *africana*, Somaliland, DACQUÉ, Beitr. Pal. Oesterr.-Ung. xvii, p. 11, pl. ii, fig. 5; †*A. cf. konincki*, Cretaceous, Egypt, FOURTEAU, Bull. Inst. Egypt iv, 4, p. 346, pl. v, figg. 10 & 11.
- †*A. pygmæa*, Portugal, FELIX, Comm. geol. Portugal v, p. 385, pl. iii, figg. 4 & 5, **n. sp.**
- Astylospongia præmorsa*, REMEŠ, Vestnik. Klub. Prostejove 1898, i, p. 8, fig. 2.
- Aulocyathus* **n. g.** near *Ceratotrochus*, p. 300, *A. juvenescens* **n. sp.**, E. Africa, p. 301, pl. xviii, fig. 17, MARENZELLER, Ergebn. Valdivia iii.
- †*Aulopora serpens*, p. 57, figg. 6 & 7, var. *tubæformis*, figg. 8 & 9, Devonian, SMYČKA, Vestnik. Klub. Prostejove 1905, vii.
- Axohelia schrammii*, VERRILL, Tr. Connect. Ac. xi (1), p. 110, pl. xviii, figg. 3 & 4.
- Balanophyllia italica*, p. 313, pl. xviii, fig. 22, MARENZELLER, Ergebn. Valdivia iii.
- B. truncata*, p. 68, pl. xxv, fig. 4, *B. induta*, p. 69, fig. 1, *B. fossata*, p. 70, fig. 2, *B. patula*, p. 71, fig. 6, *B. torta*, p. 72, fig. 5, *B. carliculata*, p. 73, fig. 8, *B. basedowi*, p. 74, fig. 7, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *B. dilatata*, S. Australia, DENNANT, t. c. p. 10, pl. i, fig. 2 : **n. spp.**
- †*Baryhelix hexacnema*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 182, pl. xvii, fig. 6, **n. sp.**
- Bathyaetis symmetrica*, p. 312, pl. xviii, fig. 25, MARENZELLER, Ergebn. Valdivia iii.
- B. beaumariensis*, p. 66, pl. xxiv, fig. 3, *B. excelsa*, p. 67, pl. xxiv, fig. 4, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- †*Bolboporites americanus*, New York, RUEDEMANN, Rep. N. York Mus. lv, p. 11, pl. i, fig. 1.
- Boloceroopsis* **n. gen.** for *B. platei* **n. sp.**, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 255, figg. 34 & 35.
- Bunodeopsis globulifera*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 559, pl. lxvii, fig. 4, **n. sp.**
- †*Calamophyllia tubiporæformis*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 173, pl. xvi, fig. 7, **n. sp.**
- †*Calceola sandalina*, Devonian, SMYČKA, Vestnik. Klub. Prostejove vii, p. 58, figg. 12 & 13.
- Callogyra* **n. gen.** for *C. formosa* **n. sp.**, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 86, pl. xxiv, figg. 1 & 2.
- Campophyllum uralicum*, Ural, Devonian, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 71, fig. 14, **n. sp.**
- †*Caninia cylindrica* var. *bristoliensis*, VAUGHAN, P. Bristol Soc. x, p. 103, pl. i, fig. 4.
- Caryophyllia clavus*, =(communis auctt.) variation local, pp. 281-293, pl. xvi, fig. 9, *cyathus*, fig. 6, *arcuata*, fig. 8, p. 295, MARENZELLER, Ergebn. Valdivia iii.
- C. diomedee*, Mexico, MARENZELLER, Bull. Mus. Harvard xliii, p. 79, pl. i, fig. 2; *C. antarctica*, Bouvet Island, p. 293, pl. xvi, fig. 7, MARENZELLER, Ergebn. Valdivia iii : **n. spp.**

- +*Caryosmilia granosa*, Cretaceous, Egypt, FOURTEAU, Bull. Inst. Egypt iv, 4, p. 345, pl. v, figg. 8 & 9.
- +*Centrastræa leptomeræ*, p. 169, pl. xvi, fig. 1, *C. blanckenhorni*, p. 170, figg. 2 & 3, *C. polystyla*, fig. 4, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, **n. spp.**
- +*Ceratopora jacksoni*, New York, Marcellus limestones, WOOD, Rep. N. York Mus. lv, p. 155, pl. i, fig. 1.
- Ceratotrochus australiensis*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 56, pl. xxii, fig. 5.
- C. delicatus*, Agulhas Bank, p. 302, pl. xviii, fig. 18, MARENZELLER, Ergebn. Valdivia iii, **n. sp.**
- Ceriantipathaires*, of van Beneden, a valid Order, ROULE, p. 710, C.R. Ac. Sci. cxxxviii.
- Cerianthus solitarius*, form regulation, CHILD, Biol. Bull. vi, pp. 55-75, 266-287, 7 figg., vii, pp. 127-154, 193-215, 263-280; *C. solitarius*, form regulation, CHILD, Smithson. Collect. xlv, pp. 134-143; *C.*, Southern California, KOFORD, Science xix, pp. 505-508; *C. borealis*, development and anatomy, KINGSLEY, Tufts Coll. Stud. 1904, No. 8, pp. 345-361, 7 figg.
- C. danielsseni*, Lofoden, ROULE, C.R. Ass. Franc. xxxiii, pp. 791-793; *C. natans*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 47, pl. ix, fig. 6 : **n. spp.**
- +(? *Chaetetes*) *bristolensis*, Bristol, Carboniferous, VAUGHAN, P. Bristol Soc. x, p. 96, pl. i, fig. 2, **n. sp.**
- Chitonanthus castaneus*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, Fauna Chilensis, p. 282, figg. 72-74, **n. sp.**
- Choriactis impatiens*, Chili, McMURRICH, t. c. p. 272, figg. 59-61.
- C. crassa*, Chili, McMURRICH, t. c. p. 274, figg. 62-65, **n. sp.**
- Cladocora arbuscula*, MARENZELLER, Bull. Mus. Harvard xliii, p. 76, pl. i, fig. 1.
- +*Cleistopora (Michelinia) geometrica*, Bristol, VAUGHAN, P. Bristol Soc. x, p. 99, pl. i, fig. 3.
- +*Clisiophyllum urbinatum*, p. 117, pl. i, fig. 6, *C. sp.*, p. 119, VAUGHAN, t.c.
- Cæloria sinensis*, anatomy, HEICKE, Arch. Naturg. 1904, i, p. 282, pl. xii, figg. 13-17.
- Cænopsammia profunda*, p. 313, pl. xviii, fig. 24, MARENZELLER, Ergebn. Valdivia iii.
- +*Comoseris leptophyes*, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 172, pl. xvi, fig. 6, **n. sp.**
- Conosmilia granulata*, p. 65, pl. xxiv, fig. 5, *C. stylifera*, p. 65, fig. 1, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Corallium japonicum*, Japan, KITAHARA, J. Imp. Fish. Bureau Tokyo xiii, 3, 14 pp., pls. i-v; *C. japonicum*, p. 21, figg., *C. boskuensis*, p. 22, figg., *C. sulcatum*, p. 23, figg., *C. elatius*, p. 24, figg., *C. kononji*, p. 26, figg., *C. inutile*, p. 27, figg., structure and habits, KISHINOUE, op. cit. xiv, 1.
- C. pusillum*, Japan, KISHINOUE, t. c. p. 27, pl. v, figg. 3 & 4, pl. vii, fig. 4, **n. sp.**
- Cribrina hermaphroditica*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 287, figg. 78-81.
- C. conica*, *C. elongata*, Chili, McMURRICH, op. cit. 1904, p. 284, figg. 75-77, p. 289, figg. 82-84, **n. spp.**
- +*Cyathophyllum* aff. *murchisoni*, VAUGHAN, P. Bristol Soc. x, p. 116, pl. i, fig. 5.
- +*C. taramellii*, Italian Alps, D'OSSAT, Atti Acc. Lincei (5) iv, p. 92, fig. 1; +*C. uralicum*, Ural, Devonian, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 70, fig. 13 : **n. spp.**
- +*Cyclolites choffati*, FELIX Commis. geol. Portugal v, p. 379, pl. iii, figg. 2 & 3, **n. sp.**

- Cyphastræa nodulosa*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 107, pl. xxxi, fig. 2; †*C. intermedia*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 198, pl. x, fig. 1 : **n. spp.**
- †*Cystiphyllum geyeri*, Corniche Alps, d'OSSAT, Atti Acc. Lincei (5) iv, p. 97, figg. 5, 6, 7, **n. sp.**
- Dactylactis benedeni*, Gulf of California, pelagic Cerianthus, GRAVIER, Ann. Sci. nat. xx, pp. 253-289.
- Deltocyathus stellaris*, p. 60, pl. xxiii, fig. 1, *D. fontinalis*, p. 61, fig. 5, *D. vercontis*, p. 62, pl. xxiv, fig. 2, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *D. vincentinus*, S. Australia, DENNANT, t. c. p. 6, pl. ii, fig. 1 : **n. spp.**
- Dendrophyllia cornigera*, p. 313, pl. xviii, fig. 21, MARENZELLER, Ergebn. Valdivia iii.
- Desmophyllum crista galli*, pl. x, fig. 2, localities p. 267, MARENZELLER, t. c.
- †*Dimorphastræa kobyi*, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 171, pl. xvi, fig. 5, **n. sp.**
- Discoirochus? pateriformis*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 57, pl. xxii, fig. 7, **n. sp.**
- Dissonema turrida*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 8, pl. ii, fig. 10.
- Distichoptilum gracile*, Iceland, JUNGENSEN, Danish Ingolf. Exp. v, 1, p. 62, pl. i, figg. 12-14.
- Dysmorphosa minuta*, budding of, TRINCI, Monit. Zool. ital. xv, pp. 304-310.
- Echinopora elegans*, *E. concinna*, pp. 138 & 139, pl. xxix, figg. 3 & 4, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), **n. spp.**
- †*Emmonsia jaiveæ*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 59, fig. 4, **n. sp.**
- †*Endophyllum torosum*, d'OSSAT, Atti Acc. Lincei (5) iv, p. 94, fig. 4.
- Epicystis osculifera*, VERRILL, Tr. Connect. Ac. xi (1), p. 47, pl. vii, fig. 1.
- Epizoanthus patagonichus*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, 1904, p. 296, figg. 85 & 86.
- Errina macrogastra*, Gulf of California, MARENZELLER, Bull. Mus. Harvard xliii, p. 81, pl. ii, fig. 1, pl. iii, fig. 1, **n. sp.**
- Eunicea atra*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 52, pl. ix, figg. 4 & 5, **n. sp.**
- Eusmilia aspera*, VERRILL, t. c. p. 114, fig. 3.
- Favia fragum*, p. 90, pl. xiii, figg. 1 & 2, *F. gravida*, p. 91, pl. xiii, fig. 3, *F. leptophylla*, p. 91, figg. 4 & 5, Bermudas, VERRILL, t. c.
- F. whitfield*, Bermudas, VERRILL, t. c. p. 132, pl. xxv, p. 5; †*F. minor*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 199, pl. x, fig. 6 : **n. spp.**
- †*Favitinae n. subfam.*, VERRILL, Tr. Connect. Ac. xi (1), p. 87.
- †*Favosites goldfussi*, d'OSSAT, Atti Acc. Lincei (5) iv, p. 99, fig. 13.
- †*F. thildæ*, Corniche Alps, d'OSSAT, t. c. p. 98, figg. 8-12; †*F. uralica*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 59, fig. 1 : **n. spp.**
- †*Fistulipora aff. incrustans*, VAUGHAN, P. Bristol. Soc. x, p. 120, pl. 1, fig. 1.
- †*Flabellum medioplicatum*, p. 52, pl. xxii, fig. 2, *F. microscriptum*, p. 53, p. xxii, fig. 1, *F. grangense*, p. 54, fig. 3, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *F. deludens*, pl. xvii, fig. 10, p. 269 (= *japonicum* and *luciniatum*), *stabile*, Cape Verde, p. 273, fig. 12, *chunii* (= *distinctum* Duncan), p. 274, pl. xviii, fig. 14, *magnificum*, Sumatra, p. 276, pl. xvii, fig. 13, *inconstans*, Francis-Bucht, p. 277, pl. xvii, fig. 11, MARENZELLER, Ergebn. Valdivia iii : **n. spp.**
- Gorgonia cavolinii*, chemical composition, COOK, Amer. J. Physiol. xii, pp. 95-98.

- Gyrostoma selkirkii*, *G. incertum*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, pp. 227-230, pl. xiv, figg. 6-12, pl. xv, figg. 13-15, **n. spp.**
- Halianthus chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 223, pl. xiv, fig. 1-5, **n. sp.**
- Halipterus christii*, Færoe Islands, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 45, pl. ii, figg. 30-32.
- +*Heliolites interstinctus*, p. 104, figg. 18 & 19, var. *devonica*, p. 105, fig. 20, *H. porosus*, p. 106, fig. 21, D'OSSAT, Atti Acc. Lincei (5) iv.
- +*H. devonica*, Ural, Devonian, BOGATIREW, Trudni Kazan. Univ. xxxii, v, p. 69, fig. 5, **n. sp.**
- +*Helioles porosa*, Devonian, SMYČKA, Vestnik. Klub. Prostějove 1905, vii, p. 56, figg. 10 & 11.
- +*Heterocœnia provincialis*, structure, JANENSCH, Zeitschr. Deutsch. geol. Ges. lv, 4, pp. 486-493.
- Holcotrochus crenulatus*, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 3, pl. ii, fig. 4, **n. sp.**
- Homophyllia australis*, DENNANT, t. c. p. 8, pl. ii, fig. 2.
- Hormathia exlex*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 279, figg. 70 & 71, **n. sp.**
- Isophyllia dipsacea*, *I. fragilis*, pp. 118-125, pl. xvi, fig. 12, pl. xvii, figg. 1-7, pl. xviii, figg. 1 & 2, pl. xix, figg. 1-5, pl. xx, fig. 2, VERRILL, Tr. Connect. Ac. xi (1).
- I. multiflora*, Bermudas, VERRILL, t. c. p. 125, pl. xx, fig. 1, pl. xxv, fig. 1, **n. sp.**
- +*Latimœandra zumoffeni*, p. 175, pl. xvii, fig. 3, *L. amphitrites*, p. 176, fig. 1, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, **n. spp.**
- Lebrunia danae*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 48, pl. vi, fig. 1; *L. danae*, Bermudas, VERRILL, op. cit. x (2), p. 555, pl. lxvii, fig. 3, pl. lxix, fig. 1.
- Leptocyathus? convexus*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 59, pl. xxiii, fig. 3, **n. sp.**
- +*Leptoseris meneghinii*, Dalmatia, DAINELLI, Pal. Ital. x, p. 179, pl. xv, fig. 6, **n. sp.**
- +*Lonsdaleia frechi*, *L. fennemai*, Sumatra, VOLZ, Geol. Pal. Abh. vi, p. 100, figg. 32-34, p. 102, fig. 35, **n. spp.**
- Lophohelia prolifera*, p. 307, pl. xv, fig. 3, MARENZELLER, Ergebn. Valdivia iii.
- Lophophyllum proliferum*, morphology, YAKOVLEVA, Bull. Lab. St. Petersb. vii, 2, pp. 87-101, 1 fig.
- Madracis decactis*, VERRILL, Tr. Connect. Ac. xi (1), p. 108, fig. 2.
- Madreporaria*, morphology, septal sequence, DUERDEN, Biol. Bull. vii, pp. 79-104, 9 figg.
- Madreporinae*, transformation of dorsal tentacle in several genera, KREMPF (136).
- Meandrina braziliensis*, VERRILL, Tr. Connect. Ac. xi (1), p. 190, pl. xxxiv, fig. 1.
- +*Menophyllum ulrichianum*, Colorado, Girty, Prof. Papers U. S. Geol. Surv. 16, 1903, p. 271, pl. i, figg. 1 & 2, **n. sp.**
- Metridium*, used in aquaria as a test for artificial sea waters, TRUE, Science xix, p. 252.
- ?*M. parvulum*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 276, figg. 66-68, **n. sp.**
- Millepora alciornis*, VERRILL, Tr. Connect. Ac. xi (1), p. 182, fig. 13.
- Mœandridæ* **n. fam.** *Mœandrinae* **n. subfam.**, VERRILL, t. c. p. 65.
- Mœandra labyrinthiformis*, p. 70, pl. x, figg. 1-3, *M. cerebrum*, p. 74, fig. 4, pl. xii, fig. 4, pl. xiv, figg. 4 & 5, *M. agassizii*, p. 80, pl. xiv, fig. 1, *M. areolata*, p. 81, pl. xi, figg. 1 & 2, pl. xii, figg. 1-3, *M. conferta*, p. 84, pl. xiii, fig. 6, Bermudas, VERRILL, t. c.
- Mussa (Symphyllia) rigida*, p. 127, pl. xxv, figg. 2 & 3, *M. harttii*, p. 128,

- pl. xxii, figg. 1 & 2, pl. xxiii, figg. 1 & 2, pl. xxv, fig. 4, pl. xxxiii, fig. 3, *M. braziliensis*, p. 192, pl. xxi, fig. 1, VERRILL, t. c.
- M. (Symphyllia) hispida*, Bermudas, VERRILL, t. c. p. 127, pl. xxi, fig. 2; *M. (Symphyllia) tenuisepta*, Bermudas, VERRILL, t. c. p. 193, pl. xxi, fig. 3; *M. (Symphyllia) unnectens*, Bermudas, VERRILL, t. c. p. 178, pl. xxxv, figg. 1 & 2 : **n. spp.**
- Mycedium explanatum*, VERRILL, t. c. p. 136, pl. xxix, fig. 1.
- M. tenuicostatum*, Bermudas, VERRILL, t. c. p. 137, pl. xxix, fig. 2, **n. sp.**
- †*Nicholsonia n. gen.* for *N. cylindrica n. sp.*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 69, fig. 6.
- Oculina varicosa*, p. 173, pl. xxxii, figg. 2-4, pl. xxx, fig. 3, *O. valenciennesi*, p. 176, pl. xxxii, fig. 5, Bermudas, VERRILL, Tr. Connect. Ac. xi (1).
- O. umbellata*, Australian Tertiaries, DENNANT, Tr. Soc. S. Austral. xxviii, p. 63, pl. xxv, fig. 3, **n. sp.**
- Odonthocyathus stella* Alcock, young of *Stephanotrochus*, MARENZELLER, p. 307, Ergbn. Valdivia iii.
- Omphyma* sp., morphology and morphogeny, YAKOVLEVA, Bull. Lab. St. Petersb. vii, 2, pp. 87-101, figg. 3-5.
- Orbicella annularis*, p. 94, pl. xv, figg. 1 & 2, *O. excelsa*, p. 98, fig. 4, *O. aperta*, p. 103, pl. xxxiii, fig. 1, Bermudas, VERRILL, Tr. Connect. Ac. xi (1).
- O. hispidula*, Bermudas, VERRILL, t. c. p. 100, pl. xv, fig. 3; *O. braziliiana n. n.* for *O. cavernosa* Quelch.; †*O. humphreysi*, p. 171, pl. x, fig. 2, *O. lyonsi*, p. 195, figg. 4 & 5, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi : **n. spp.**
- Pachycyathus n. gen.* [no sp. named], Japan, ROULE, C.R. Ass. Franc. xxxiii, pp. 791-793; *P. benedeni*, characters, ROULE, p. 708, C.R. Ac. Sci. cxxxviii.
- †*Pachypora reticulata*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 100, fig. 14.
- Palythoa grandiflora*, VERRILL, Tr. Connect. Ac. xi (1), p. 52, pl. vii, fig. 2.
- P. grandiflora*, Bermudas, VERRILL, op. cit. x (2), p. 564, pl. lxviii, fig. 6, **n. sp.**
- Paractis nivea*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 239, pl. xv, fig. 16-19.
- P. ignota*, *P. tenuicollis*, pp. 242 & 243, pl. xv, figg. 20-26, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, **n. spp.**
- †*Paracyathus vaughani*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 438, pl. cxxii, figg. 1-3.
- Parasmilia fecunda*, p. 311, pl. xv, fig. 5, MARENZELLER, Ergebn. Valdivia iii.
- P. flindersensis*, p. 64, pl. xxiii, fig. 2, *P. lucens*, p. 64, pl. xxiv, fig. 6, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Parantheopsis n. gen.* for *P. cruentata* (= *Actinia* Couthouy), McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 232.
- Parazoanthus elongatus*, Chili, McMURRICH, t. c. p. 298, figg. 87-89, **n. sp.**
- †*Paronipora n. gen.* for *P. penicillata n. sp.* (*Favositidae*), CAPEDER, Riv. ital. Pal. x, 1, pp. 58-61, pls. ii & iii.
- Pavonaria finmarchica*, Iceland, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 39, pl. ii, figg. 28 & 29, pl. iii, figg. 33-36.
- Pennaria tiarella*, maturation, fertilization, early cleavage, formation of ectoderm and endoderm, HARGITT, Arch. Entwicklmech. xviii, pp. 453-488, pls. xxiv-xxviii.
- Pennatula aculeata*, p. 11, pl. i, fig. 1, JUNGENSEN, Danish Ingolf-Exp. v, 1, anatomy.
- P. prolifera*, Davis Straits, JUNGENSEN, t. c. p. 18, pl. ii, figg. 15-24, **n. sp.**
- Pennatulide*, polymorphism, HICKSON, Rep. Brit. Ass. 1903, p. 688.
- Phellia rufa*, VERRILL, Tr. Connect. Ac. xi (1), p. 49, pl. vi, fig. 5.
- P. simplex*, Bermudas, VERRILL, t. c. p. 48; *P. rufa*, Bermudas, VERRILL, op. cit. x (2), p. 557, pl. lxviii, fig. 2 : **n. spp.**

- +*Phillipsastræa ananas*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 93, figg. 2 & 3.
 +*Phyllocœnia ægyptiaca*, affinities, FOURTEAU, Bull. Inst. Egypt. iv, 4, p. 347.
 +*P. transiens*, Portugal, FELIX, Comm. geol. Portugal v, p. 384, pl. iii, fig. 1, **n. sp.**
Phymactis clematis, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 259, figg. 36-43.
Placotrochus magnus, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 54, pl. xxii, fig. 4, **n. sp.**
Platytrachus maudensis, Australian Tertiaries, DENNANT, t. c. p. 56, pl. xxii, fig. 6, **n. sp.**
Plesiastrea goodei, VERRILL, Tr. Connect. Ac. xi (1), p. 106, fig. 1.
P. goodei, Bermudas, VERRILL, op. cit. x (2), p. 553, pl. lxvii, fig. 1; *P. proximans*, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 9, pl. ii, fig. 3 : **n. spp.**
Polytremacis lindströmi, REMEŠ, Vestnik. Klub. Prostejove 1898, p. 7, fig. 1, **n. sp.**
Porites polymorpha, VERRILL, Tr. Connect. Ac. xi (1), p. 158, pl. xxxi, fig. 3, *P. astreoides*, p. 160, pl. xxxi, fig. 4, *P. verrillii*, p. 161, fig. 5, *P. banneri*, p. 162, fig. 6.
Porosphaera, structure and affinities, HINDE, J. R. Micr. Soc. 1904, pp. 1-25, pls. i & ii.
Protopalmytha **n. n.** for *Gemmaria* McMURRICH, *P. grandis* **n. sp.**, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 563, pl. lxvii, fig. 6.
Protophilum denticulatum, Greenland, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 59, pl. i, figg. 9-11, **n. sp.**
P. carpenteri, p. 51, pl. i, figg. 2 & 3, *P. thomsoni*, p. 55, figg. 4-8, JUNGENSEN, t. c.
Pycnanthus lineolatus, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 245, pl. xv, figg. 27-29.
Rhizotrochus radiatus, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 2, pl. i, fig. 1, **n. sp.**
Rhodarea lagrenæi, anatomy, HEICKE, Arch. Naturg. 1904, i, p. 258, pl. xii, figg. 1-12.
Sagartia spp., functioning of nematocysts, ABRIC, C.R. Soc. Biol. lvi, pp. 1008-1010; *S. luciae*, variation in number of stripes, DAVENPORT, Mark Anniv. Vol. pp. 137-164, pl. x; *S. davisii*, regeneration and non-sexual reproduction, TORREY & THERY, Univ. Calif. publ. Zool. i, 6, pp. 211-226, 9 figg.; *S. chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 265, figg. 48-52; *S. parasitica*, GORKA, Allatt. Kozl. Maygar Tars. i, 1902, p. 104, fig. 1; *S. davisii*, habits and reactions of, TORREY, Biol. Bull. vi, pp. 203-216.
S. herpetodes, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 268, figg. 53-58, **n. sp.**
 +*Septastrea marylandica*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 444, pl. cxxvi, figg. 1 & 2, pl. cxxvii, figg. 1-3, pl. cxxviii, figg. 1 & 2, pl. cxxix.
Siderastræa, septal sequence, DUERDEN, Rep. Brit. Ass. 1903, p. 687; *S. siderea*, p. 151, pl. xxx, figg. 2 & 3, *S. radians*, p. 153, fig. 1, *S. stellata*, p. 155, figg. 4 & 5, Bermudas, VERRILL, Tr. Connect. Ac. xi (1); *S. radians*, natural history, anatomy, postlarval development, DUERDEN (52A).
Solenastrea hyades, Bermudas, VERRILL, t. c. p. 104, pl. xv, fig. 5.
 +*S. anomala*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 173, pl. x, fig. 3, **n. sp.**
Solenocaulon tortuosum, pl. vii, fig. 1, *S. cervicorne*, fig. 2, pl. viii, figg. 2, 3, 7, 8 & 9, *S. grayi*, pl. viii, figg. 1-5, anatomy, JANOVER, Rev. Suisse Zool. xii, pp. 445-538, pls. vii & viii.

- Solenosmilia variabilis*, p. 310, pl. xv, fig. 4, MARENZELLER, *Ergebn. Valdivia* iii.
- Sphenotrochus aurantiacus*, Agulhas Bank, MARENZELLER, p. 280, pl. xviii, fig. 15, t. c. **n. sp.**
- Spongodes kluzingeri*, anatomy, KÜKENTHAL, *Denk. Ges. Jena* 1904, p. 51, pl. iv, fig. 9.
- S. maji*, p. 53, pl. iv, fig. 10, pl. v, fig. 20, *S. hartmeyer*, p. 55, pl. iv, fig. 11, pl. v, fig. 21, *S. ehrenbergi*, p. 56, pl. iv, fig. 12, pl. v, fig. 22, Red Sea, KÜKENTHAL, t. c. **n. spp.**
- Stenocyathus vermiciformis*, p. 298, pl. xviii, fig. 16, MARENZELLER, *Ergebn. Valdivia* iii.
- Stenohelia profunda*, Mexico, MARENZELLER, *Bull. Mus. Harvard* xliii, 2, 3, p. 86, pl. ii, fig. 2.
- +*Stenopora leichardti*, Queensland, GREGORY & DAINTREE, *P. Soc. Victoria* xvi, 2, p. 322.
- +*Stephanocenia halmopotis*, *S. major*, p. 181, pl. xvii, figg. 5, 8, Jura Chalk, FELIX, *Beitr. Pal. Oesterr.-Ung.* xv, **n. spp.**
- Stephanotrochus campaniformis*, Atlantic, p. 302, pl. xviii, fig. 20, *explanans*, Sumatra, p. 304, pl. xviii, fig. 19, MARENZELLER, *Ergebn. Valdivia* iii, **n. spp.**
- Stichopathes richardi* **n. sp.** (not described), ROULE, *C.R. Ac. Sci.* cxxxviii, pp. 1621 & 1622.
- Streptelasma europeum*, morphology, YAKOVLEVA, *Bull. Lab. St. Petersb.* vii, 2, pp. 87-101, fig. 2.
- +*Stromatopora concentrica*, d'OSSAT, *Atti Acc. Lincei* (5) iv, p. 109, fig. 22.
- Stylaster divergens*, Mexico, MARENZELLER, *Bull. Mus. Harvard* xliii, p. 83, pl. ii, fig. 3, pl. iii, fig. 2, **n. sp.**
- +*Syringopora*, Clifton, Carboniferous, VAUGHAN, *P. Bristol. Soc.* x, p. 99, **n. sp.** unnamed.
- Tealia crassicornis*, male reproductive organs, RETZIUS, *Biol. Untersuch.* xi, p. 29, pl. xiii, figg. 14-20; *T. c.*, functioning of nematocysts, ABRIC, *C.R. Soc. Biol.* lvi, pp. 1008-1010.
- Tetracoralla* or rugose corals, development and affinities, DUERDEN, *Science* xix, p. 217.
- Trachyphyllinæ* **n. subfam.**, VERRILL, *Tr. Connect. Ac.* xi (1), p. 84.
- Trematotrochus verconis*, S. Australia, DENNANT, *Tr. R. Soc. S. Austral.* xxviii, p. 5, pl. i, fig. 4, **n. sp.**
- +*Trochocyathus calcitrapa*, Saratov, ARKHANGHELSKII, *Mater. gheol. Rossii* xxii, p. 61, pl. xi, figg. 11 & 12.
- T. wilkinsoni*, Australian Tertiaries, DENNANT, *Tr. R. Soc. S. Austral.* xxviii, p. 58, pl. xxiii, fig. 4, **n. sp.**
- +*Trochoseris nutrithii*, Dalmatia, DAINELLI, *Pal. Ital.* x, p. 174, pl. xv, fig. 1, **n. sp.**
- Umbellula lindahl*, p. 75, pl. iii, figg. 37-46, *U. encrinus*, p. 79, pl. iii, figg. 46-51, JUNGENSEN, *Danish Ingolf-Exp.* v, 1.
- Verrucella grandis*, Bermudas, VERRILL, *Tr. Connect. Ac.* xi (1), p. 53, pl. ix, figg. 1-3, **n. sp.**
- Virgularia cladiscus* **n. n.** for *V. tuberculata* Marshall, JUNGENSEN, *Danish Ingolf-Exp.* v, 1, p. 33.
- Xenia umbellata*, p. 34, *X. fuscescens*, p. 34, 2 figg., KÜKENTHAL, *Denk. Ges. Jena* 1904.
- Zoanthus dubius*, VERRILL, *Tr. Connect. Ac.* x (2), p. 562, pl. lxvii, fig. 9.
- Z. proteus* (= *Z. flos-marinus* McMurrich), Bermudas, VERRILL, t. c. p. 561, pl. lxvii, fig. 5, **n. sp.**

VI. CTENOPHORA.

[The following memoirs refer to *Ctenophora*:—BROWNE (18), GILSON (72), HARTLAUB (96), HUNTER (113), SCHNEIDER (199), TORREY (210), MAR. BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

Origin of genital cells in Ctenophores, SCHNEIDER (199).

Reactions of *Mnemiopsis*, HUNTER (113).

Norway, collections, HARTLAUB (96).

San Diego, n. spp., TORREY (210).

SYSTEMATIC.

Beroë forskali, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 47, pl. i, fig. 2; *B. ovata*, reproductive and renal cells, SCHNEIDER, Zeitschr. wiss. Zool. lxxvi, pp. 388-399, pl. xxiv.

Euplokamis californensis, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 46, n. sp.

Mertensia ovum, San Diego, TORREY, t. c. p. 46, pl. i, fig. 1.

Mnemiopsis, effect of temperature changes, and geotropism, HUNTER, Science xix, pp. 219 & 220; *M.*, reactions, HUNTER, Biol. Bull. vi, pp. 324.

Pleurobrachia bachei, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 46, pl. i, fig. 3.

Steenstrupia rubra, anatomy, HARTLAUB, Wiss. Meeresuntersuch. v, 2, pp. 97-106, fig. 3.

XVII. SPONGIÆ.

BY

W. WOODLAND.

CONTENTS.

	Page
INTRODUCTION	3
I. TITLES	4
II. BIOLOGY	8
A. Evolution	8
B. Morphology	8
(i) General Accounts	8
(ii) External Characters	8
(iii) Anatomy of Soft Parts. Canal-System	8
(iv) Skeletal System	8
(a) General Accounts	8
(b) Material of the Skeleton	9
(c) Skeletal Elements, Morphology, Develop- ment, and Nomenclature of	9
(d) Skeletal Anatomy	9
(v) Histology	9
(a) General Accounts	9
(b) Special Organs or Tissues	9
c. Physiology.	9
(i) General Accounts	9
(ii) Particular Functions	9
D. Bionomics	10
E. Reproduction, Development and Growth	10
(i) Germ-Cells, Fertilization	10
(ii) Embryology	10
(a) General Accounts	10
(b) Early Stages, Larvæ, Metamorphosis, &c.	10
(iii) Asexual Reproduction	10
(a) Fission, Vegetative Budding and Regene- ration	10
(b) Germinal Budding and Gemmule-For- mation	10

	Page
F. Miscellanea	10
(i) Bibliography	10
(ii) Technique	10
(iii) Economics	10
(iv) Classification	11
(v) Chemistry of Sponges	11

III. DISTRIBUTION.

A. Geographical	11
a. Marine	11
(i) General	11
(ii) Atlantic Ocean and Adjacent Seas	11
(iii) Indian Ocean and Adjacent Seas	11
(iv) Pacific Ocean and Adjacent Seas	11
(v) Arctic Seas (vacant).	
(vi) Antarctic Seas	11
β. Freshwater	11
B. Geological	11
(i) General (vacant).	
(ii) Cainozoic	11
(iii) Mesozoic	11
(iv) Palæozoic	12

IV. SYSTEMATIC.

A. Porifera, general	12
B. Calcarea (including <i>Astroscleridæ</i>)	12
(i) Homocœla	12
(ii) Heterocœla	12
C. Hexactinellida	13
(i) Lyssacina	13
(ii) Dictyonina	16
D. Demospongiæ	18
(i) Tetraxonida	18
(a) Carnosa	18
(b) Tetractinellida	18
(1) Choristida	18
(2) Lithistida	19
(ii) Monaxonida	21
(a) Hadromerina	21
(1) Aciculina	21
(2) Clavulina	21
(b) Halichondrina	22
(iii) Keratosa	25
(a) Dictyoceratina	25
(b) Dendroceratina	26
(iv) Myxospongida	26
E. Octactinellida (vacant).	
F. Heteractinellida (vacant).	
G. Incertæ Sedis	26

INTRODUCTION.

I. The record of Sponge literature for 1904 comprises 61 publications (including 53A), exclusive of abstracts or reviews. This number is one more than that of last year, but not all of these publications belong to the year 1904 as will be seen by the list appended below.

II. Sponge literature has during 1904 chiefly been enriched by the four splendid monographs of IJIMA (24), SCHULZE (43), TOPSENT (50) and WILSON (60)—monographs principally of systematic value, though the last three authors also provide general accounts of the skeleton and other portions of sponge structure. The monograph of IJIMA continues his important researches on Japanese Hexactinellids (*Rossellidæ*); SCHULZE describes the Hexactinellid sponges of the "Valdivia" expedition; TOPSENT describes sponges from the Azores and WILSON sponges obtained by the "Albatross" in the Pacific Ocean. Other systematic memoirs of importance are those of HINDE (18, 19) on the genus *Porosphaera*, MINCHIN (36) on the genus *Leucosolenia*, SEELY (45), SZYMAŃSKI (47) and THUM (49). The number of new genera and new species described in 1904 is considerable.

III. Some of the chief features of morphological importance to be noticed are the proof of the sponge nature and the description of the intimate structure of *Porosphaera* by HINDE (18); the description of the huge basal spicule of *Monoraphis chuni* by SCHULZE (43), who also gives a general account of Hexactinellid morphology, and, amongst other things, the description of Sollas' membrane in *Pæcillastra* and *Penares*, and of the reticular skeletal septa crossing the gastral cavity of *Euplectella* and *Chonelasma* by WILSON (60).

IV. In Physiology, Bionomics and Economics, there is little to record. MAAS (31, 32) describes the results of rearing Calcareous sponges in water deprived of calcium salts; COBB (5) gives an account of the sponge fishery in Florida; COTTE (6) continues his studies on nutrition in sponges, and certain phenomena, which may be classed under the heading of Bionomics, are described by CUENOT (7), DUERDEN (9), GRUVEL (15), HERDMAN (17), TOPSENT (50) and WILSON (60). In connection with the Reproduction of Sponges, GÖRICH (14) further contributes to our knowledge of spermatogenesis and oögenesis in sponges, and IJIMA (24), SCHULZE (43), TOPSENT (50) and WILSON (60) also supply information concerning gemmule-formation, larvæ and vegetative budding in several genera of siliceous sponges.

V. Under the heading of Geographical Distribution, the most important contributions are the four large systematic monographs mentioned above, which describe sponges from the Japanese seas, Atlantic and Indian Oceans, Azores and South Pacific Ocean respectively. Sponges from waters adjacent to the Atlantic Ocean are also described by IAKHONTOFF (23), by SOWINSKY (46), and by SZYMAŃSKI (48). Calcareous sponges from the Antarctic Seas are described by VANHÖFFEN (56). The chief palæontological memoirs are those of HINDE (18, 19), JUKES-BROWNE & HILL (26) and ROWE (41).

Sponge memoirs, hitherto unrecorded, belonging to years decidedly previous to 1904 are those of CLARKE (3), GRUVEL (15), HOLLICK (21), IAKHONTOFF (23), REMEŠ (40) and SEELY (45).

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II. BIOLOGY.

A. EVOLUTION (PHYLOGENY, VARIATION, &c.).

- Phylogenetic relation between *Lyssacina* and *Dictyonalia*: IJIMA (24) p. 211.—Descent Theory illustrated by Sponges: LENDENFELD (28).—Variation in Siliceous sponges, remarks on, pp. 8–11; distinction of species in sponges, remarks on: WILSON (60) pp. 11, 12.

B. MORPHOLOGY.

(i) *General Accounts.*

- Brief general account of Sponge morphology: CLAUS & GROBBEN (4) pp. 249–252.

(ii) *External Characters.*

- Lichen-like growth of *Spongilla lacustris*: GILLOT (13).—Conical elevations on surface of *Acanthascus cactus* F. E. S.: IJIMA (24) pp. 144, 145.—Size of body, body-form and external characters in general of Hexactinellids: SCHULZE (43) pp. 185–190.—Pedunculate form of body in *Hyalonema pedunculatum*, p. 19; shrub-like habitus of *Sclerothamnopsis compressa* resembling that of hitherto unique *Sclerothamnus clausii* M.: WILSON (60) p. 84.

(iii) *Anatomy of the Soft Tissues. Canal-System.*

- Porosphæra*, canal-system of: HINDE (18) pp. 17, 18.—Soft parts of *Acanthascus alani* Ij., pp. 159, 160, of *A. cactus* F. E. S., pp. 154–158, of *Aulosaccus mitsukurii* Ij., pp. 126, 127, of *A. schulzei* Ij., pp. 111, 112, of *Crateromorpha corrugata* Ij., p. 79–82, of *C. meyeri* J. E. G., pp. 59, 60, of *C. meyeri tuberosa* Ij., p. 69, of *C. pachyactina* Ij., p. 75, of *Hyalascus giganteus* Ij., pp. 101–103, of *H. sagamiensis* Ij., pp. 89, 90, of *Lanuginella pupa*, pp. 14–16, of *Rhabdocalyptus capillatus* Ij., pp. 287–291, of *R. victor* Ij., pp. 251–253, of *Scyphidium longispina*, pp. 29–31, of *Staurocalyptus entacanthus*, n. sp., pp. 200–202, of *S. glaber* Ij., pp. 212, 213, of *Vitrollula fertilis*, pp. 43–46: IJIMA (24).—Soft parts of Hexactinellids: SCHULZE (43) pp. 188–197.—Soft parts of horny sponges: SZYMAŃSKI (47).—Similarity between main afferent and efferent canals and their apertures in *Pæcillastra tricornis*, p. 102; Sollas' membrane present in *Pæcillastra* and *Penares*, pp. 103, 107, 113; Character of sieve-plate region in *Regadrella delicata*, p. 36: WILSON (60).

(iv) *Skeletal System.*

- (a) **General Accounts.**—Brief account of sponge spicules: CLAUS & GROBBEN (4) p. 251.—Spiculation of *Leucosolenia complicata*, *L. variabilis*, *L. botryoides*, full description of: MINCHIN (36) pp. 363–370, 376–383, 387–391.—Spiculation of sponges in general, remarks on: TOPSENT (50) pp. 14–16.

(b) **Material of the Skeleton.**—Spicule-sheaths in Hexactinellids, pp. 204–210; Chemical nature of spicule-substance in Hexactinellids, pp. 219–221; Structure of spicules in Hexactinellids, pp. 221–243: SCHULZE (43).

(c) **Morphology, Development and Nomenclature of Skeletal Elements.**—Macrodiscohexasters of *Aulosaccus schulzei* Ij., pp. 114–117; Spicules (gastralia) present on surface of excurrent canals in *Crateromorpha meyeri* J. E. G., called Canalaria, p. 65; Degenerate oxyhexasters with less than six terminal points in *Hyalascus sagamiensis* Ij., p. 95; Hexactinose oxyhexasters in *Hyalascus similis*, n. sp., pp. 99, 100; Hexactinellid scleroblast-nuclei in *Rhabdocalyptus capillatus* Ij., p. 290; Siliceous reticular bodies in *Staurocalyptus glaber* Ij., pp. 210, 211; Spicules (stauractins) in the larva of *Vitrollula fertilis*, pp. 52, 53: IJIMA (24).—Huge basal spicule of *Monorhaphis chuni*, n. g., n. sp., pp. 112, 113; Intracellular development of siliceous spicules, pp. 243–254: SCHULZE (43).—Structure of discohexasters in *Caulophacus schulzei* suggests evolution of the hexaster from the hexact, pp. 48, 49; Degeneration of the uncinata into the oxydiact in *Hexactinella labyrinthica*, p. 81; Reticular skeletal masses in *Hexactinella labyrinthica*, p. 79; Pathological amphidises (hexacts with additional rays) in *Hyalonema pateriferum*, p. 32; Peculiar dichotriænes of *Penares foliaformis* approach shape of Lithistid phyllotriæne, p. 113; Arrangement of axial canals in scopulæ of *Sclerothamnopsis* indicates equivalence to branched diacts, p. 86; Protriænes of *Thenaea* are modified dichotriænes, p. 89; Metasters intermediate between spirasters and euasters in *Thenaea pyriformis*, p. 100; Spicule terminology, remarks on, pp. 13, 14: WILSON (60).—Spicules in larva of *Thoosa armata* T.: TOPSENT (50) pp. 110, 111.

(d) **Skeletal Anatomy.**—Hexactinellid spicules, geological remains of: CLARKE (3).—*Porosphæra*, skeleton of: HINDE (18) pp. 14–17.—Chalineen-skelete: THUM (49).—Spiculation of *Malacosaccus floricomatus* T.: TOPSENT (50) pp. 35–38.—Reticular skeletal septa cross sponge cavity in *Euplectella* and *Chonelasma*: WILSON (60) pp. 34, 74.

(v) *Histology.*

(a) **General Accounts.**—Histology of *Lanuginella pupa*, pp. 14–16, of *Rhabdocalyptus capillatus* Ij., pp. 288–290, of *R. victor* Ij., pp. 252, 253, of *Scyphidium longispina*, pp. 29–31, of *Vitrollula fertilis*, pp. 44–46: IJIMA (24).—Histology of Hexactinellids: SCHULZE (43) pp. 197–219.

(b) **Histology of Special Organs or Classes of Cells.**—Thesocytes and rosette-like bodies in *Acanthascus cactus* F. E. S., pp. 157, 158; Archæocytes of *Lanuginella pupa*, p. 16; Archæocytes, thesocytes, and peculiar bodies in *Scyphidium longispina*, pp. 30, 31; Thesocytes of *Staurocalyptus entacanthus* n. sp., pp. 201, 202; Archæocytes of *Vitrollula fertilis*, pp. 44, 45; Choanocytes of *Vitrollula fertilis*, p. 44: IJIMA (24).—Thesocytes of Hexactinellids, pp. 210–213; Scleroblasts in Hexactinellids, pp. 204–210: SCHULZE (43).

C. PHYSIOLOGY.

(i) **General Accounts.**—Vacant.

(ii) **Particular Functions.**—Nutrition in Sponges: COTTE (6) pp. 776–780.

D. BIONOMICS.

Similarity of external appearance between certain Doris and Sponges : CUENOT (7) p. 4.—Actinians commensal on sponges : DUERDEN (9).—Molluscan eggs contained in tissues of sponges and destruction of mollusc shells by acid secreted by a siliceous sponge : GRUVEL (15).—Pearls originated by boring sponges, such as *Clione* : HERDMAN (17).—Development of Calcareous Sponges in water deprived of calcium salts : MAAS (31, 32).—Influence of local conditions on coloration of sponges, remarks on : TOPSENT (50) p. 17.—Mutual attachment of deep-sea Hexactinellids : WILSON (60) pp. 43, 50, 51.

E. REPRODUCTION AND DEVELOPMENT.

(i) *Germ-Cells, Fertilization.*

Spermatogenesis and Oogenesis in sponges : GÖRICH (14).—Ova and sperm-cells of Hexactinellids : SCHULZE (43) pp. 215–219.

(ii) *Embryology.*

(a) **General Accounts.**—Brief account of sponge embryology : CLAUS & GROBBEN (4) p. 253.

(b) **Early stages, larvae, metamorphosis and post-larval development.**—*Porosphaera*, manner of growth : HINDE (18) pp. 11–14.—Larvæ of *Vitrollula fertilis* : IJIMA (24) pp. 46–55.—Larvæ of *Sycandra setosa* reared in water deprived of calcium salts : MAAS (32).—Larvæ of Hexactinellids : SCHULZE (43) pp. 215–218.—Larvæ of *Thoosa armata* T. : TOPSENT (50) pp. 110, 111.—Development of complex *Eurete* and *Farrea* colonies from simple cup-like forms : WILSON (60) pp. 64, 65.

(iii) *Asexual Reproduction.*

(a) **Fission and Vegetative Budding.**—Budding in *Acanthascinae*, pp. 129, 143, in *Rhabdocalyptus mollis* F. E. S., pp. 258, 259, in *Scyphidium longispina*, p. 22 : IJIMA (24).

(b) **Germinal budding.**—Origin of the larva from archæocyte-congeries in *Vitrollula fertilis* : IJIMA (24) pp. 53–55.—Gemmules of *Tetilla longipilis*, n. sp. : TOPSENT (50) p. 98.

F. MISCELLANEOUS.

Bibliography.—Record of Sponge literature for 1903 : BIBL. ZOOL. ix, pp. 9, 57, 190, 304, 423.—Titles of 27 memoirs upon sponges, with abstracts : MAAS (33).—List of memoirs on sponges published in the years 1901, 1902, with summaries under different headings of the more important additions to scientific knowledge of the Porifera : WELTNER (58).—Abstracts of certain sponge memoirs (1900–1904) : LENDENFELD (30).

Technique.—Methods of displaying spicules of fossil siliceous sponges : LENDENFELD (29).—Methods of preparing sponges : MARPMANN (35).—Method of preparation of calcareous spicules : MINCHIN (36) p. 356.

Economics.—Full account of the Sponge fishery of Florida in 1900 : COBB (5).

Classification.—Classification, general remarks on: TOPSENT (50) pp. 17-19.

Chemistry of Sponges.—Spongosterin from *Suberites*, &c.: HENZE (16).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

α. MARINE.

(i) **General.**—General distribution of Sponges, remarks on: M'INTOSH (36).—Horizontal and bathymetrical distribution of Hexactinellids: SCHULZE (43) pp. 257-265.

(ii) **Atlantic Ocean and Adjacent Seas.**—Golfe de Gascogne, sponges from: GRUVEL (15).—Lake Baical, *Veluspa baicalensis*, D., *V. fusifera*, *Spongilla microgemmata*, S., *Lubomyrskia irregularis*, S., from: IAKHONTOFF (23) p. 3.—Plymouth, sponge fauna of: MAR. BIOL. ASS. (34).—Atlantic Ocean, Hexactinellids from: SCHULZE (43).—Ponto-Aralo-Kaspian marine basin, sponges from: SOWINSKY (46) pp. 173, 289, 328.—Aegina and Brioni bei Pola, horny sponges from: SZYMAŃSKI (48).—Azores archipelago, lists of sponges obtained from: TOPSENT (50).—Îles du Cap-Vert, *Sarostegia oculata* from: TOPSENT (51).

(iii) **Indian Ocean and Adjacent Seas.**—Indian Ocean, Hexactinellids from: SCHULZE (43).

(iv) **Pacific Ocean and Adjacent Seas.**—Sagami Sea, Hexactinellids from: IJIMA (24).—San Diego, Southern California, sponges from: KOFOID (27).—West coasts of Mexico, Central and South America and off the Galapagos Islands, sponges collected from, pp. 5, 6; *Thenea fenestrata* now recorded for the Pacific, p. 91: WILSON (60).

(v) **Arctic Seas.**—Vacant.

(vi) **Antarctic Seas.**—Antarctic Seas, calcareous sponges from: VANHÖFFEN (56).

β. FRESHWATER SPONGES.

Spongilla lacustris from Chambilly: GILLOT (13).

B. GEOLOGICAL.

(i) GENERAL.

Vacant.

(ii) CAINOZOIC.

Swabian sandstone, sponges from: SCHUTZE (44).—Diluvial deposits of Lübeck, *Spongilla lacustris*, L. from: RANGE (39) p. 238.—Fossil (Cainozoic) sponges from Victoria, South Australia and Tasmania: DENNANT & KITSON (8) p. 136.

(iii) MESOZOIC.

Untern Kreide im westschweizerischen Jura, sponges from: BAUMBERGER (1) p. 21.—Muschelkalk, *Scyphia roemeri*, n. sp., *S. sp.*, *S. caminensis*, from the: ECK (10).—Cretaceous rocks, New South Wales, *Purisiphonia clarkei*,

B. from: ETHERIDGE (11).—Oolitic and cretaceous rocks south of Scarborough, sponges from: FOX-STRANGWAYS (12) p. 40 et seq.—English Chalk, zonal distribution of species of *Porosphæra* in: HINDE (18) pp. 6–10.—*Cephalites longitudinalis*, *Pharetrospongia strahani*, *Plinthosella squamosa*, *Plocoscyphia convoluta*, *P. sp.*, *Porosphæra globularis*, *P. nuciformis*, *P. patelliformis* from the Surrey Chalk: HINDE (19).—English Chalk, *Placotrema cretaceum*, *Ventriculites decurrens*, *V. impressus*, *V. alcyonoides*, *V. radiatus*, *Plocoscyphia*, *Camerospongia*, *Porosphæra pileolus*, *P. sp.* from the: HOLMES (20).—Kreideformation, fossil sponges from the: JAHN (25).—Upper, Lower and Middle English Chalk, list of fossil sponges from: JUKES-BROWNE & HILL (26).—Chalk of Yorkshire Coast, *Ventriculites radiatus*, *V. cribrus*, *V. impressus*, *V. infundibuliformis*, *V. convolutus*, *V. decurrens*, *Plocoscyphia convoluta*, *Porochonia simplex*, *Coscinopora infundibuliformis*, *Guettardia stellata*, *Leptophragma murchisoni*, *Cæloptychium agaricoides*, *Callopegma obconicum*, *Heterostinia obliqua*, *Siphonia konigi*, *Stelletta inclusa*, *Cliona cretacea*, *Porosphæra globularis*, *P. globularis* var. *nuciformis*, *P. pileolus*, *P. pileolus* var. *patelliformis*, *P. pileolus* var. *arrecta*, from: ROWE (41) pp. 292, 293.—Flint, Denmark, fossil sponges from: USSING (55).—Solnhofener Plattenkalke, *Ammonella quadrata*, **n. g., n. sp.**, *Phyllospongia lumbricaria*, *P. acuminata*, *P. elongata*, *P. rubarticulata*, *P. latifrons*, *P. varius*, from the: WALTHER (57) pp. 162, 163.

(iv) PALÆOZOIC.

Silurian of Rio Trombetas, Para, Brazil, sponges from: CLARKE (3).

IV. SYSTEMATIC.

[A name of a species, followed only by a reference to a name from the list of titles, is a record of occurrence pure and simple. The approximate locality (or horizon) can be ascertained by looking up the author's name attached to the particular species in the above (section III).]

A. PORIFERA, GENERAL.

B. CALCAREA.

(i) *HOMOCÆLA*.

Family CLATHRINIDÆ.

Clathrina coriacea, *C. lacunosa*: MAR. BIOL. ASS. (34).

Family LEUCOSOLENIIDÆ.

Leucosolenia botryoides, *L. complicata*, *L. variabilis*: MAR. BIOL. ASS. (34).—*L. complicata*, *L. variabilis*, *L. botryoides* redefined and re-described in full: MINCHIN (36) pp. 360–394.

(ii) *HETEROCÆLA*.

Family SYCETTIDÆ.

Sycon seu *Sycandra raphanus*, spermatogenesis in: GÖRICH (14).—*S. compressum*, *S. coronatum*: MAR. BIOL. ASS. (34).—*S. setosa* grown in water deprived of calcium salts: MAAS (31, 32).—*S. setosum*, *S. coronata*: SOWINSKY (46) p. 289.

+*Tremacystia d'orbigny*, *T. siphonoides*: JUKES-BROWNE & HILL (26) p. 505.

Family PHARETRONIDÆ seu PHARETRONES.

- †*Bactronella parvula*, *B. australis*: DENNANT & KITSON (8).
 †*Blastinia aspera*: FOX-STRANGWAYS (12) p. 40.
 †*Corynella* sp.: JAHN (25).
 †*Discoelia peronni*: BAUMBERGER (1) p. 21.
 †*Elasmoiera sequana*, *E. crassa*: BAUMBERGER (1) p. 21.
 †*Elasmostoma consobrinum*, *E. crassum*, *E. scitulum*, *E.* sp.: JUKES-BROWNE & HILL (26) p. 504.—*E.* sp.: JAHN (25).
 †*Holcospongia* (*Spongia*) *floriceps*, *H. polita* (*Stellispongia corallina*): FOX-STRANGWAYS (12) p. 40.
 †*Manon marginatum*: JUKES-BROWNE & HILL (26) p. 506.
 †*Oculospongia* sp.: BAUMBERGER (1) p. 21.
 †*Peronidella recta*, *H.*: FOX-STRANGWAYS (12) p. 40.
 †*Pharetrospongia strahani*: JUKES-BROWNE & HILL (26) p. 504.—*P. strahani*: HINDE (19).
 †*Plectroninia balbi*: DENNANT & KITSON (8).
 †*Porosphera*, history, and full description of genus and species, pp. 1–25; *P. globularis*, *P. nuciformis*, *P. woodwardi*, *P. pileolus* redescribed, pp. 19–23; *P. patelliformis*, **n. sp.**, *P. arrecta*, **n. sp.** described, pp. 23, 24: HINDE (18).—*P. globularis*, *P. nuciformis*, *P. patelliformis*: HINDE (19).—*P. pileolus*, *P.* sp.: HOLMES (20).—*P. globularis*: JAHN (25).—*P. globularis*, *P. globularis* var. *nuciformis*, *P. pileolus*, *P. pileolus* var. *patelliformis*, *P. pileolus* var. *arrecta*: ROWE (41) p. 293.
 †*Siphonocelia crassa*: BAUMBERGER (1) p. 21.
Sparsispongia gemmata: BAUMBERGER (1) p. 21.
 †*Spongia* [*Holcospongia*] *floriceps*: FOX-STRANGWAYS (12) p. 49.
 †*Stellispongia salevensis*: BAUMBERGER (1) p. 21.
 †*Tretocalia pezica*: DENNANT & KITSON (8).
 †*Tremospongia* sp. BAUMBERGER (1) p. 21.
 †*Woodwardi*: JUKES-BROWNE & HILL (26) p. 505.

C. HEXACTINELLIDA.

(i) LYSSACINA.

- Hexasterophora, characters of sub-order: SCHULZE (43) p. 172.
 Amphidiscophora, characters of suborder: SCHULZE (43) pp. 180, 181.

Family EUPLECTELLIDÆ.

- Euplectellidæ*, characters of family with list of genera: SCHULZE (43) pp. 172, 173.
Euplectella, characters of genus, p. 132; *E. suberea* W. T., redescribed, pp. 9–15; *E. nobilis* F. E. S. **n. sp.**, described, pp. 15–17; *E. aspergillum* R. O., redescribed, pp. 17–21; *E.* (? *simplex* F. E. S.), redescribed, pp. 21, 22: SCHULZE (43).—*E. suberea* W. T., redescribed: TOPSENT (50) pp. 38, 39.—*E.*, sp., described: WILSON (60) pp. 33, 34.
Holascus, characters of genus, p. 130; *H. tenuis* F. E. S. **n. sp.**, described, pp. 3–7; *H. obesus* F. E. S. **n. sp.**, described, pp. 7, 8; *H. fibulatus* F. E. S., redescribed, pp. 8, 9: SCHULZE (43).
Malacosaccus floricomatus T., redescribed: TOPSENT (50) pp. 33–38.—*M. unguiculatus* F. E. S., redescribed: TOPSENT (53A).
Regadrella, characters of genus, p. 134; *R.* (? *phoenix* O. Sch.), described, pp. 22, 23: SCHULZE (43).—*R. phoenix* Sch., redescribed: TOPSENT (50) pp. 39, 40; (53A).—*R.*, sp., described, pp. 35, 36; *R. delicata*, **n. sp.**, diagnosed and described, pp. 36–42: WILSON (60).

Family HERTWIGIDÆ.

Hertwigia, characters of genus, p. 135; *H. falcifera* O. Sch., redescribed, pp. 23, 34: SCHULZE (43).

Family CAULOPHACIDÆ.

Caulophacidæ, characters of family with list of genera: SCHULZE (43) pp. 173, 174.

Caulophacus, characters of genus, p. 137; *C. valdiviæ* F. E. S., redescribed, pp. 25–28: SCHULZE (43).—*C. schulzei*, **n. sp.**, diagnosed and described, pp. 43–50; *C.*, **sp.**, described, p. 50: WILSON (60).

Family HYALONEMATIDÆ.

Compsocalyx, characters of **n. g.**, pp. 164, 165; *C. gibberosa* F. E. S., **n. sp.**, described, pp. 99–103: SCHULZE (43).

Hyalonematidæ, characters of family with list of genera, p. 181: SCHULZE (43).

Hyalonema, characters of genus, p. 162; *H. thomsonis* W. M., redescribed, pp. 67–69; *H. calix* F. E. S., **n. sp.**, described, pp. 69–73; *H. somalicum* F. E. S., **n. sp.**, described, pp. 73, 74; *H. globiferum* F. E. S., redescribed, pp. 75–77; *H. solutum* F. E. S., **n. sp.**, described, pp. 77, 78; *H. valdiviæ* F. E. S., **n. sp.**, described, pp. 78–80; *H. rapa* F. E. S. juv., redescribed, pp. 80–82; *H. validum* F. E. S., **n. sp.**, described, pp. 82, 83; *H. tulipa* F. E. S., **n. sp.**, described, pp. 83–85; *H. simile* F. E. S., **n. sp.**, described, pp. 85–88; *H. coniforme* F. E. S., **n. sp.**, described, pp. 88, 89; *H. urna* F. E. S., **n. sp.**, described, pp. 89–91; *H. apertum* F. E. S., redescribed, pp. 91–95; *H. molle* F. E. S., **n. sp.**, described, pp. 95, 96; *H. proximum* F. E. S., **n. sp.**, described, pp. 64–67: SCHULZE (43).—*H. ovuliferum* F. E. S., redescribed, pp. 16–19; *H. pedunculatum*, **n. sp.**, diagnosed and described, pp. 19–22; *H. bianchoratum*, **n. sp.**, diagnosed and described, pp. 22–25; *H.*, species diversæ described, pp. 25–28; *H. pateriferum*, **n. sp.**, diagnosed and described, pp. 28–33: WILSON (60).—*H. thomsoni* W. M., redescribed, p. 31; *H. infundibulum* T., redescribed, p. 32: TOPSENT (50).

Pheronema, characters of genus, p. 151; *P. carpenteri* (W. T.), redescribed, pp. 50–52; *P. raphanus* F. E. S., redescribed, pp. 52–58: SCHULZE (43).—*P. grayi* S. K., redescribed, pp. 29–31: TOPSENT (50).

Platylistrum, **n. g.**, characters of genus, p. 165; *P. platessa* F. E. S., **n. sp.**, described, pp. 59–64: SCHULZE (43).

+*Stauractinella cretacea*: JUKES-BROWNE & HILL (26), p. 508.

Family SEMPERELLIDÆ.

(SEMPERELLINÆ removed from HYALONEMATIDÆ to form a distinct family.)

Semperellidæ, characters of family with list of genera: SCHULZE (43) p. 181.

Semperella, characters of genus, p. 167; *S. cucumis* F. E. S., redescribed, pp. 103–110; *S. spicifera* F. E. S., redescribed, pp. 110–112: SCHULZE (43).

Monoraphis, characters of **n. g.**, pp. 167, 168; *M. chuni* F. E. S., **n. sp.**, described, pp. 112–121; *M. divis* F. E. S., **n. sp.**, described, pp. 121–125: SCHULZE (43).

Family LEUCOPSACIDÆ.

Leucopsacidæ, characters of family with list of genera, p. 175 : SCHULZE (43).

Leucopsacus scoliodocus Ij., **n. var. retroscissus**, described : TOPSENT (54).
Channangium, characters of **n. g.**, p. 138 ; *C. crater* F. E. S., **n. sp.**, described, pp. 31–33 ; *C. sp.*, F. E. S., described, pp. 33, 34 : SCHULZE (43).

Placopegma, characters of genus, p. 137 ; *P. solutum* F. E. S., redescribed, pp. 28–31 : SCHULZE (43).

Family ROSSELLIDÆ.

Diagnosis of the family, subdivided into *Lanuginellinæ*, *Rossellinæ*, and *Acanthascinæ* : IJIMA (24) pp. 1, 2 ; SCHULZE (43) pp. 175, 176.

Rossellinæ, diagnosis of sub-family and key to genera : IJIMA (24) pp. 16–19 ; SCHULZE (43) p. 176.

Lanuginellinæ, diagnosis of sub-family and key to genera and species : IJIMA (24) pp. 2, 3 ; SCHULZE (43) p. 176.

Acanthascinæ, diagnosis of sub-family, general organization and key to genera : IJIMA (24) pp. 127–139 ; SCHULZE (43) p. 177.

Acanthascus F. E. S., diagnosis of genus with key to species, pp. 139, 140 ; *A. cactus* F. E. S., redescribed, pp. 140–158 ; *A. alani* Ij., redescribed, pp. 158–162 : IJIMA (24).

Asconema setubalense S. K., redescribed : TOPSENT (50) p. 41.

Aulosaccus Ij., diagnosis of genus with key to species, pp. 107–110 ; *A. mitsukurii* Ij., redescribed, pp. 117–127 ; *A. schulzei* Ij., redescribed, pp. 110–117 : IJIMA (24).

Bathydorus levis spinosus, **n. subsp.**, diagnosed and described : WILSON (60) pp. 51–54.

Bolosoma, **nom. nov.**, substituted for *Placosoma* : IJIMA (24) p. 305.

Crateromorpha J. E. Gray, diagnosis of genus and key to species, pp. 55–57 ; *C. meyeri* J. E. G., redescribed with descriptions of two new sub-species *C. m. tuberosa* Ij., **n. subsp.** and *C. m. rugosa* Ij., **n. subsp.**, pp. 57–74 ; *C. pachyactina* Ij., redescribed, pp. 74–78 ; *C. corrugata* Ij., redescribed, pp. 78–86 : IJIMA (24).

Hyalascus Ij., diagnosis of genus and key to species, pp. 87, 88 ; *H. sagamiensis* Ij., redescribed, 88–96 ; *H. giganteus* Ij., redescribed, pp. 100–107 ; *H. similis*, **n. sp.**, described, pp. 96–100 : IJIMA (24).

Lanuginella pupa O. S., redescribed : IJIMA (24) pp. 3–16, pl. i.

Rhabdocalyptus F. E. S., diagnosis of genus and key to species, pp. 236–238 ; *R. victor* Ij., redescribed, pp. 238–253 ; *R. unguiculatus*, **n. sp.**, described, pp. 268–276 ; *R. capillatus* Ij., redescribed, pp. 276–291 ; *R. mollis* F. E. S., redescribed, pp. 253–268 : IJIMA (24).—*R.*, characters of genus, p. 140 ; *R. baculifer* F. E. S., **n. sp.**, described, pp. 34–36 : SCHULZE (43).

Scyphidium F. E. S., diagnosis of genus and key to species, pp. 20, 21 ; *S. namiyei*, **n. nom.** for *Vitrollula namiyei* Ij., redescribed, pp. 32–37 ; *S. longispina*, **n. nom.** for *Rossella longispina* Ij., redescribed, pp. 22–31 : IJIMA (24).

Staurocalyptus Ij., diagnosis of genus and key to species, pp. 162–168 ; *S. ræperi* F. E. S., redescribed, pp. 168–172 ; *S. dowlingsi* L. M. L., redescribed, pp. 172–175 ; *S. tubulosus*, **n. sp.**, described, pp. 175–180 ; *S. affinis*, **n. sp.**, described, pp. 180–191 ; *S. entacanthus*, **n. sp.**, described, pp. 191–202 ; *S. heteractinus* Ij., redescribed, pp. 218–222 ; *S. pleorhaphides* Ij., redescribed, pp. 222–230 ; *S.* (sp. ?), described, pp. 231–236 ; *S. microchetus* Ij., redescribed, pp. 202–206 ; *S. glaber* Ij.,

redescribed, pp. 207-218: IJIMA (24).—*S.*, sp., described, WILSON (60) pp. 54-56.

Vitrollula Ij., characters of the genus, p. 37; *V. fertilis* Ij., redescribed, pp. 38-55: IJIMA (24).

(ii) *DICTYONINA*.

Family COSCINOPORIDÆ.

Coscinoporidæ, characters of family: SCHULZE (43) p. 178.

Bathyxiphus, sp., described: WILSON (60) pp. 75-77.

Chonelasma schulzei, T. redescribed, pp. 51-53; *C. ijimai* T., redescribed, pp. 53-55: TOPSENT (50).—*C. calyx* F. E. S. (sp.?), redescribed: WILSON (60) pp. 74, 75.

+*Coscinopora infundibuliformis*, *C. quincuncialis*, *C.* sp.: JUKES-BROWNE & HILL (26) p. 506.—*C. infundibuliformis*: ROWE (41).

+*Guetardia stellata*: ROWE (41).—*G. angularis*, *G. stellata*: JUKES-BROWNE & HILL (26) p. 506.

+*Leptophragma murchisoni*: ROWE (41).—*L. fragilis*, *L. murchisoni*: JUKES-BROWNE & HILL (26) p. 506.

+*Pleurostoma radiatum*: JUKES-BROWNE & HILL (26) p. 507.—*P. bohemicum*, *P. scyphus*: JAHN (25).

Family TRETICALYCIDÆ (formerly TRETODICTYIDÆ, Schulze).

Tretocalycidæ (formerly *Tretodictyidæ* F. E. S.), characters of family with list of genera: SCHULZE (43) pp. 179, 180.

Hexactinella labyrinthica, n. sp., diagnosed and described, pp. 77-82; *H. ventilabrum* Carter (sp.?), described, pp. 82, 83; *H. tubulosa* F. E. S. (sp.?), described, pp. 83, 84: WILSON (60).—*H. filholi*, n. sp., described: TOPSENT (53).—*H. grimaldii* T., redescribed: TOPSENT (53A).

Sclerothamnopsis compressa, n. g. et sp., diagnosed and described: WILSON (60) pp. 84-87.

Family AULOCYSTIDÆ.

Characters of family: SCHULZE (43) p. 180.

Family DACTYLOCALYCIDÆ.

Characters of family, with list of genera: SCHULZE (43) p. 180.

Auloplax, characters of genus, pp. 148, 149; *A. auricularis* F. E. S., redescribed, pp. 47-50: SCHULZE (43).

Family EURETIDÆ (includes FARREIDÆ).

Characters of family with list of genera: SCHULZE (43) pp. 177, 178.

+*Ammonella quadrata*, n. g., n. sp., described: WALTHER (57) pp. 162, 163.

+*Craticularia vulgata*, *C. subseriata*: JAHN (25).—*C. fittoni*, *C. subseriata*, *C.* sp.: JUKES-BROWNE & HILL (26) p. 506.

+*Cribrospongia subreticulata*: JAHN (25).

Eurete, characters of genus, p. 143; *E.* sp., described, pp. 37, 38: SCHULZE (43).—*E. erectum tubuliferum*, n. subsp., diagnosed and described,

pp. 63–68; *E. erectum mucronatum*, **n. subsp.**, diagnosed and described, pp. 68, 69; *E. erectum gracile*, **n. subsp.**, diagnosed and described, pp. 69–72: WILSON (60).—*E. alicei* T., redescribed, p. 45: TOPSENT (50).

Farrea, characters of genus: SCHULZE (43) p. 142.—*F. occa* B., **n. var.**, *laminaris*, redescribed, p. 43; *F. weltneri* T., redescribed, p. 43: TOPSENT (50).

F. occa claviformis, **n. subsp.**, diagnosed and described, pp. 57–59; *F. mexicana*, **n. sp.**, diagnosed and described, pp. 60–62; *F. sp.*, described, p. 62: WILSON (60).

Ramella, **n. g.**, characters of, p. 144; *R. tubulosa* F. E. S., **n. sp.**, described, pp. 38, 39: SCHULZE (43).

Sarostegia oculata, **n. g., n. sp.**, described: TOPSENT (51).—*S. oculata* T., redescribed: TOPSENT (54).

+*Strephinia convoluta*, *S. retiformis*: JUKES-BROWNE & HILL (26) p. 508.

+*Verrucocalia tubulata*, *V. vectensis*, *V. sp.*: JUKES-BROWNE & HILL (26) p. 509.

Family MELLITTIONIDÆ (APHROCALLISTIDÆ).

Aphrocallistidæ, characters of family: SCHULZE (43) pp. 178, 179.

Aphrocallistes, characters of genus, p. 148; *A. beatrix* J. E. G., redescribed, pp. 39–47: SCHULZE (43).—*A. azoricus* T., redescribed: TOPSENT (50) pp. 48–50.—*A. vastus* F. E. S. (sp.?), redescribed: WILSON (60) p. 73.—*A. sp.*: JUKES-BROWNE & HILL (26) p. 505.

+*Stauroinema carteri*, *S. lobatum*, *S. planum*: JUKES-BROWNE & HILL (26) p. 508.

Family MÆANDROSPONGIDÆ.

+*Callodictyon angustatum*: JUKES-BROWNE & HILL (26) p. 505.

+*Camerospongia*: HOLMES (20).—*C. aperta*, *C. campanulata*, *C. capitata*, *C. subrotunda*: JUKES-BROWNE & HILL (26) p. 505.

+*Diplodictyon bayfieldi*: JUKES-BROWNE & HILL (26) p. 506.

+*Etheridgea sp.*: JUKES-BROWNE & HILL (26) p. 506.

+*Plocoscyphia convoluta*, *P. sp.*: HINDE (19).—*P.*: HOLMES (20).—*P. pertusa*: JAHN (25).—*P. convoluta*, *P. elegans*, *P. fenestrata*, *P. flexuosa*, *P. foliacea*, *P. labrosa*, *P. meandrina*, *P. labyrinthica*, *P. reticulata*, *P. subrotunda*, *P. vagans*: JUKES-BROWNE & HILL (26) pp. 507, 508.—*P. convoluta*: ROWE (41).

+*Porochonia simplex*: JUKES-BROWNE & HILL (26) p. 508.—*P. simplex*: ROWE (41).

+*Toulminia obliqua*: JUKES-BROWNE & HILL (26) p. 509.

+*Tremabolites perforatus*: JUKES-BROWNE & HILL (26) p. 509.

Family STAURODERMIDÆ.

+*Cincliderma quadratum*: JUKES-BROWNE & HILL (26) p. 505.

+*Ophrystoma micrommatum*: JUKES-BROWNE & HILL (26) p. 507.

+*Placotrema cretaceum*: HOLMES (20).—*P. cretaceum*: JUKES-BROWNE & HILL (26) p. 507.

+*Porostomia (Porospongia) sp.*: BAUMBERGER (1) p. 21.

+*Purisiphonia clarkei*: ETHERIDGE (11).

Family CÆLOPTYCHIDÆ.

+*Cæloptychium agaricoides*, *C. decimium*, *C. sp.*: JUKES-BROWNE & HILL (26) p. 506.—*C. agaricoides*: ROWE (41).

Family VENTRICULITIDÆ.

- +*Cephalites longitudinalis*: HINDE (19).—*C. alternans*, *C. benettii*, *C. bullatus*, *C. catinifer*, *C. compressus*, *C. guttatus*, *C. longitudinalis*, *C. paradoxus*, *C. perforatus*: JUKES-BROWNE & HILL (26) p. 505.
- +*Polyplastidium racemosum*, *P. tuberosum*: JUKES-BROWNE & HILL (26) p. 508.
- +*Rhizopoterion cervicorne*: JAHN (25).
- +*Sestrocladia furcatus*: JUKES-BROWNE & HILL (26) p. 508.
- +*Sporodoscinia capax*, *S. micrommata*: JUKES-BROWNE & HILL (26) p. 508.
- +*Ventriculites decurrens*, *V. impressus*, *V. alcyonoides*, *V. radiatus*: HOLMES (20).—*V. alcyonoides*, *V. alternans*, *V. infundibuliformis*, *V. augustatus*, *V. convolutus*, *V. cribrus*, *V. decurrens*, *V. impressus*, *V. mammillaris*, *V. moniliferous*, *V. radiatus*, *V. quincuncialis* (see *Coscinopora*), *V. simplex* (see *Porochonia*): JUKES-BROWNE & HILL (26) p. 509.—*V. marginatus*, *V. radiatus*, *V. odontostoma*: JAHN (25).—*V. radiatus*, *V. cribrus*, *V. impressus*, *V. infundibuliformis*, *V. convolutus*, *V. decurrens*: ROWE (41).

D. DEMOSPONGIÆ.

(i) *TETRAxonIDA*.

(a) Order CARNOSA.

Sub-order MICROTRIÆNOSA.

- Corticella geodioides* (Carter) T., redescribed: TOPSENT (50) pp. 77-79.
- Thrombus abyssi* (Carter) S., **n. var. niger**, described: TOPSENT (50) pp. 100-102.

Sub-order MICROSCLEROPHORA.

Family PLAKINIDÆ.

- Placinastrella oxeata*, **n. sp.**, described: TOPSENT (50) pp. 102, 103.

(b) Order TETRACTINELLIDA.

(1) Sub-order CHORISTIDA.

Tribe SIGMATOPHORA.

Family TETILLIDÆ.

- Chrotella amphiacantha*, **n. sp.**, described: TOPSENT (50) pp. 96, 97.
- Craniella cranium* (Müller) S., redescribed, pp. 99, 100; *C. disigma*, **n. sp.**, described: TOPSENT (50) p. 100.
- Tetilla longipilis*, **n. sp.**, described: TOPSENT (50) pp. 97-99.

Tribe ASTROPHORA.

Family GEODIDÆ.

- Cydonium gigas*, nutrition in: COTTE (6).
- Erylus nummulifer* T., redescribed, pp. 71, 72; *E. granularis*, **n. sp.**, described, pp. 72, 73; *E. mammillaris* (Schmidt) G., redescribed, pp. 73-75; *E. chavesi*, **n. sp.**, described, p. 75: TOPSENT (50).

Isops pachydermata S., redescribed : TOPSENT (50) p. 67.

Geodia eosaster (Sollas) T., redescribed, pp. 67-69 ; *G. echinastrella*, **n. sp.**, described, p. 70 ; *G. sphaerastrella*, **n. sp.**, described, pp. 70, 71 : TOPSENT (50).—*G. stelloso* : SOWINSKY (46) p. 289.—*G. baretti* : SCHEPOTIEFF (42) p. 3.

Family STELLETTIDÆ.

+*Ophiraphidites anastomosans* : JUKES-BROWNE & HILL (26) p. 507.

Penares foliaformis, **n. sp.**, diagnosed and described : WILSON (60) pp. 111-114.—*P. sclerobesa* S. E. G., redescribed : TOPSENT (50) pp. 82, 83.

Pilochrota inermis, **n. sp.**, described, pp. 79, 80 ; *P. ventricosa*, **n. sp.**, described, pp. 80, 81 ; *P. lactea* (Carter) S., redescribed, pp. 81, 82 : TOPSENT (50).

+*Stelletta inclusa* : JUKES-BROWNE & HILL (26) p. 508 and ROWE (40) p. 293.—*S. tuberosa* T., redescribed, TOPSENT (50) pp. 75-77.

Stryphnus fortis (Vosmaer) S., redescribed : TOPSENT (50) pp. 83-85.

+*Tethyopsis cretaceus* : JUKES-BROWNE & HILL (26) p. 508.

Family THENEIDÆ.

Thenea fenestrata (Sch.) S., redescribed, pp. 88-91 ; *T. echinata*, **n. sp.**, diagnosed and described, pp. 91-94 ; *T. lamelliformis*, **n. sp.**, diagnosed and described, pp. 95-98 ; *T. pyriformis*, **n. sp.**, diagnosed and described, pp. 98-100 : WILSON (60).—*T. schmidtii* S., redescribed, p. 85 : TOPSENT (50).

Family PACHASTRELLIDÆ.

TOPSENT (46) includes the *Theneidæ* and *Pachastrellidæ* in the family *Asterostreptidæ*.

Characella pachastrelloides (Carter) S., redescribed : TOPSENT (50) pp. 95, 96.

Nethea amygdaloides (Carter) T., redescribed : TOPSENT (50) p. 94.

Pæcillastra compressa (Bowerbank) S., redescribed, pp. 89, 90 ; *P. symbiotica* T., redescribed, pp. 90-92 : TOPSENT (50).—*P. tricornis*, **n. sp.**, diagnosed and described, pp. 101-105 ; *P. cribraria*, **n. sp.**, diagnosed and described, pp. 105-110 : WILSON (60).

Pachastrella monilifera S., redescribed : TOPSENT (50) pp. 92-94.—+*P. convoluta* : JUKES-BROWNE & HILL (26) p. 507.

Sphinctrella gracilis S., redescribed, pp. 88, 89 ; *S. horrida* S., redescribed, p. 86 ; *S. ornata* S., redescribed, p. 87 : TOPSENT (50).

Family PLACOSPONGIDÆ.

Rhaxella perforata H. : FOX-STRANGWAYS (12) p. 40.

(2) LITHISTIDA.

Tribe HOPLOPHORA

Family CLADOPELTIDÆ.

Siphonidium ramosum Sch., redescribed : TOPSENT (50) p. 63.

Family CORALLISTIDÆ.

Corallistes noli tangere Sch., redescribed : TOPSENT (50) pp. 59, 60.

Macandrewia azorica J. E. G., redescribed, pp. 60, 61 ; *M. robusta*, n. sp., described, pp. 61, 62 ; *M. ramosa*, n. sp., described, p. 62 : TOPSENT (50).

Family TETRACLADIDÆ.

+*Aulaxinia costata* : JUKES-BROWNE & HILL (26) p. 505.

+*Bolospongia constricta*, *B. globata* : JUKES-BROWNE & HILL (26) p. 505.

+*Callopegma ficoideum*, *C. obconicum*, *C. sp.* : JUKES-BROWNE & HILL (26) p. 505.—*C. obconicum* : ROWE (41).

Discodermia ramifera T., redescribed : TOPSENT (50) pp. 57, 58.

+*Hallirhoa agariciformis*, *H. costata* : JUKES-BROWNE & HILL (26) p. 506.

+*Jerea cordiformis*, *J. excavata*?, *J. websteri*, *J. sp.* : JUKES-BROWNE & HILL (26) p. 506.

+*Nelumbia tuberosa*, *N. sp.* : JUKES-BROWNE & HILL (26) p. 506.

+*Pholidocladia dichotoma*, *P. ramosa* : JUKES-BROWNE & HILL (26) p. 507.

+*Phymatella intumescens*, *P. reticulata* : JUKES-BROWNE & HILL (26) p. 507.

+*Phymaplectia cribrata*, *P. irregularis*, *P. scitula*, *P. spinosa* : JUKES-BROWNE & HILL (26) p. 507.

+*Plinthosella compacta*, *P. convoluta*, *P. nodosa*, *P. squamosa*, *P. sp.* : JUKES-BROWNE & HILL (26) p. 507.—*P. squamosa* : HINDE (19).

+*Polyjerea arbuscula*, *P. lobata* : JUKES-BROWNE & HILL (26) p. 508.

Racodiscula clava (Sch.) T., redescribed : TOPSENT (50) p. 58.

+*Ragadinia clavata*, *R. compressa*, *R. sulcata* : JUKES-BROWNE & HILL (26) p. 508.

+*Siphoneudea truncata* : BAUMBERGER (1) p. 21.

+*Siphonia ficus*, *S. kœnigi*, *S. tulipa* : JUKES-BROWNE & HILL (26) p. 508.—*S. kœnigi* : ROWE (41).

+*Thamnospongia clavellata*, *T. glabra*, *T. reticulata*, *T. sp.* : JUKES-BROWNE & HILL (26) pp. 508, 509.

+*Thecosiphonia nobilis*, *T. turbinata* : JUKES-BROWNE & HILL (26) p. 509.

+*Trachysycon sulcatum* : JUKES-BROWNE & HILL (26) p. 509.

+*Turonia variabilis* : JUKES-BROWNE & HILL (26) p. 509.

Family DESMANTHIDÆ.

Monocrepidium T., definition of genus, p. 47 ; *M. vermiculatum* T., redescribed, p. 148 : TOPSENT (50).

Family PLEROMIDÆ.

+*Doryderma ramosum*, *D. ræmeri*, *D. sp.* : JUKES-BROWNE & HILL (26) p. 506.

+*Heterostinia obliqua* : JUKES-BROWNE & HILL (26) p. 506.—*H. obliqua* : ROWE (41).

+*Isoraphinia tecta* : JUKES-BROWNE & HILL (26) p. 506.

+*Nematinion calyculum*, *N. sp.* : JUKES-BROWNE & HILL (26) p. 507.

Tribe ANOPLIA.

Family AZORICIDÆ.

Azorica pfeifferæ C., redescribed : TOPSENT (50) p. 64.

+*Jereica clava* : JUKES-BROWNE & HILL (26) p. 506.

Petromica grimaldii T., redescribed : TOPSENT (50) pp. 64–66.

+*Verruculina astrea*, *V. miliaris*, *V. papillata*, *V. plicata*, *V. pustulosa*, *V. reussi*, *V. sp.* : JUKES-BROWNE & HILL (26) p. 509.

Family ANOMOCLADIDÆ.

†*Astylospongia præmorsa* F. R., redescribed: REMEŠ (40).

†*Scytalia fastigiata*, *S. radiceformis*, *S. terebrata*: JUKES-BROWNE & HILL (26) p. 508.

Family RHIZOMORINIDÆ.

†*Ctenendopora callodictya* (?): JUKES-BROWNE & HILL (26) p. 505.

†*Pachinion scriptum*: JUKES-BROWNE & HILL (26) p. 507.

†*Seliscothion explanatus*, *S. planus*: JUKES-BROWNE & HILL (26) p. 508.

†*Stachyspongia spica*: JUKES-BROWNE & HILL (26) p. 505.

†*Stichophyma tumidum*, *S. sp.*: JUKES-BROWNE & HILL (26) p. 508.

(ii) MONAXONIDA.

(a) Order HADROMERINA.

1. Sub-order ACICULINA.

Family COPPATIIDÆ.

Jaspis johnstoni (Schmidt) T., redescribed, p. 128; *J. johnstoni* (Schmidt), var. *incrustans* T., redescribed, p. 128; *J. dendyi* (Sollas) T., redescribed, pp. 129, 130: TOPSENT (50).

Spongisorites placenta T., redescribed: TOPSENT (50) pp. 130, 131.

Topsentia, definition of genus, p. 131; *T. glabra* (Topsent) B., redescribed, pp. 131, 132; *T. pachastrelloides* T., p. 133: TOPSENT (50).

Family STYLOCORDYLIDÆ.

Oxycordyla, n. g., definition of genus, p. 135; *O. pellita*, n. sp., described, pp. 135, 136: TOPSENT (50).

Family TETHYIDÆ.

Heteroxya, definition of genus, p. 133; *H. corticata* T., redescribed, pp. 133–135: TOPSENT (50).

Tethya lyncurium: MAR. BIOL. ASS. (34).—*T. newberyi*: DENNANT & KITSON (8).

2. Sub-order CLAVULINA.

Family CLIONIDÆ.

Alectona millari C., redescribed: TOPSENT (50) pp. 111, 112.

Cliona labyrinthica H., redescribed, p. 105; *C. levispira* T., redescribed: TOPSENT (50) pp. 105–107.—*C. duvernoyi*, *C. nardoi*, *C. studeri*: SCHÜTZE (44).—*C. celata*: MAR. BIOL. ASS. (34).—†*C. cretacea*: ROWE (41) p. 293.—†*C. cretacea*, *C. glomerata*: JUKES-BROWNE & HILL (26) p. 505.—*C. pontica*, *C. typica*, *C. stationis*, *C. sp.?* (Czern): SOWINSKY (46) p. 289.—*Clione*, pearls originated by: HERDMAN (17).

Dotona pulchella C., redescribed: TOPSENT (50) pp. 108, 109.

Thoosa armata T., redescribed: TOPSENT (50) pp. 109–111.

Family POLYMASTIDÆ.

- Polymastia corticata* R. & D., redescribed: TOPSENT (50) pp. 119, 120.—
P. mamillaris: MAR. BIOL. ASS. (34).—*P. mœandria*, **n. sp.**, diagnosed and described: WILSON (60) pp. 115–117.
Rhaphidorus, definition of genus, p. 120; *R. setosus* T., redescribed, pp. 120–122: TOPSENT (50).
Thecophora semisuberites: SCHEPOTIEFF (42) p. 3.
Tylexocladius, definition of genus, p. 122; *T. joubini* T., redescribed, pp. 122, 123: TOPSENT (50).

Family SPIRASTRELLIDÆ.

- Hymedesmia unistellata* T., **n. var. aspera**, redescribed, pp. 112, 113;
H. chondrilloides T., redescribed, pp. 113, 114; *H. stelligera* C., redescribed, p. 114: TOPSENT (50).
Latrunculia biannulata T., redescribed, p. 115; *L. insignis* T., redescribed, pp. 115–117: TOPSENT (50).
Sceptrintus, definition of genus, p. 117; *S. richardi* T., redescribed, pp. 117–119: TOPSENT (50).

Family SUBERITIDÆ.

- Ficulia* [*Ficulina*?] *ficus* contains eggs of *Sepia*: GRUVEL (15).
Suberites laticeps, **n. sp.**, described, pp. 124, 125; *S. gibbosiceps*, **n. sp.**, described, pp. 125, 126: TOPSENT (50); *S. domuncula*: MAR. BIOL. ASS. (34).—*S. domuncula*, spongosterin obtained from: HENZE (16).—
S. prototypus, *S. domuncula*: SOWINSKY (46) p. 289.
Rhizaxinella biseta, **n. sp.**, described, pp. 126, 127; *R. uniseta*, **n. sp.**, described, pp. 127, 128: TOPSENT (50).

(b) Order HALICHONDRINA.

Family HAPLOSCLERIDÆ.

- Amorphina caspia*, *A. protochalina*, *A. dubia*, *A. grossa*: SOWINSKY (46) pp. 173, 289.
Cacochalina digitata, *C. irregularis*: SOWINSKY (46) p. 289.
†*Ceraochalina reteplax tenuis*, **n. var.**, described, *C. nuda* var. *oxyus* L., redescribed: THUM (49) pp. 15–17.
Chalinidæ, nutrition in: COTTE (6).
Chalina oculata: MAR. BIOL. ASS. (34).
†*Chalinissa elongata* L., redescribed, p. 13; *C. communis tenuis*, **n. var.**, described, p. 14: THUM (49).
†*Chalinopora typica*, var. *tenuispina* L., redescribed: THUM (49) p. 11.
†*Cladochalina euplax* L., redescribed: THUM (49) pp. 11, 12.
Cladocroce spathiformis, **n. sp.**, described: TOPSENT (50) pp. 242, 243.
†*Euchalina exigua*, var. *arborea* L., redescribed: THUM (49) pp. 20, 21.
Gelliodes bifacialis, **n. sp.**, described, pp. 229, 230; *G.*, sp., described, pp. 230, 231: TOPSENT (50).
Gellius angulatus (Bowerbank) R. and D., redescribed, p. 231; *G. fibulatus* (Schmidt) S., redescribed, p. 231; *G. flagellifer* R. and D., redescribed: TOPSENT (50) pp. 231, 232.—*G. perforatus*, **n. sp.**, diagnosed and described, pp. 130, 134: WILSON (60).
Halichondria fibrosa (Fristedt) L., redescribed, p. 247; *H. leuconoides* T., redescribed, pp. 247–249: TOPSENT (50).—*H. panicea*: MAR. BIOL. ASS. (34).—*H. panicea*, bionomics: CUENOT (7).

- Lubomyrskia irregularis*: IAKHONTOFF (23) p. 3.
Metschnikovia spinispiculum (Carter) T., redescribed, p. 243; *M. filholi* T., redescribed, pp. 243, 244: TOPSENT (50).—*M. tuberculata*, *M. intermedia*: SOWINSKY (46) p. 173.
Oceanapia N., remarks on genus, pp. 127, 128; *O. bacillifera*, **n. sp.**, diagnosed and described, pp. 128–130: WILSON (60).—*O. robusta* (Bowerbank) N., redescribed: TOPSENT (50) pp. 228, 229.
Pachychalina acapulcensis, **n. sp.**, diagnosed and described: WILSON (60) pp. 124–127.
Pellina semitubulosa, *P. longispicula*, *P. foraminosa*: SOWINSKY (46) p. 289.
Petrosia crassa (Carter) L., redescribed: TOPSENT (50) pp. 240, 241.—*P. variabilis crassa*, **n. subsp.**, diagnosed and described, pp. 118–121; *similis densissima*, **n. subsp.**, diagnosed and described, pp. 121–124: WILSON (60).
Phleodictyon fistulosum B., redescribed, pp. 235, 236; *P. coriaceum*, **n. sp.**, described, p. 237; *P. elongatum* (Topseut) L., redescribed, p. 238; *P. reticulatum*, **n. sp.**, described, pp. 238, 239; *P. æreum*, **n. sp.**, described, pp. 239, 240: TOPSENT (50).
†*Phylosiphonia pumila* L., redescribed: THUM (49) pp. 17, 18.
Protoschmidtia grimmi, *P. simplex*, *P. transitans*, *P. foraminosa*: SOWINSKY (46) p. 173, 328.
Renieridae, nutrition in: COTTE (6).
Reniera implexa Sch., redescribed, p. 244; *R. foraminosa*, **n. sp.**, described, p. 245; *R. spongiosa*, **n. sp.**, described, p. 245; *R. utriculus*, **n. sp.**, described, p. 246; *R.*, sp., described, p. 246: TOPSENT (50).—*R. simulans*, nutrition in: COTTE (6).—*R. flava*, *R. alba*, *R. aqueductus*, *R. informis*, *R. inflata*, *R. palmata*, *R. nigricans*: SOWINSKY (46) pp. 173, 289.
Rhaphisia spissa T., redescribed: TOPSENT (50) pp. 233–235.
Schmidtia intermedia: SOWINSKY (46) p. 289.
†*Spinosella sororia*, var. *dilatata* D., redescribed, pp. 18, 19; *S. sororia*, var. *elongata* D., redescribed, pp. 19, 20: THUM (49).
Spongillides from Roumania: CHIRICA (2).
Spongilla lacustris, external characters described: GILLOT (13).—*S. fluviatilis*, spermatogenesis in: GORICH (14).—*S. microgemmata*: IAKHONTOFF (23) p. 3.—*S. lacustris*: RANGE (39) p. 238.
Veluspa baicalensis, *V. fusifera*: IAKHONTOFF (23) p. 3.

Family AXINELLIDÆ.

Description of family: TOPSENT (50) p. 137.

- †*Acanthoraphis intertextus*: JUKES-BROWNE & HILL (26) p. 505.
Axinella vasonuda, **n. sp.**, described, pp. 140, 141; *A. vellerea*, **n. sp.**, described, 141, 142; *A. flustra* T., redescribed, pp. 139, 140: TOPSENT (50).—*A. rugosa*: SCHEPOTIEFF (42), p. 3.
Auletta sycinularia Sch., redescribed, pp. 143, 144; *A. sessilis*, **n. sp.**, described, p. 144, 145: TOPSENT (50).—*A. dendrophora*, **n. sp.**, diagnosed and described: WILSON (60) pp. 158–161.
Halicnemia constellata T., redescribed, *azorica* var. **n.**: TOPSENT (50) p. 149.
Higginsia thielei T., redescribed: TOPSENT (50) p. 150, 151.
Hymeniacion sanguineum, bionomics: CUENOT (7).—*H. sanguineum*, MAR. BIOL. ASS. (34).
Phakellia robusta B., redescribed, p. 143; *P. lamelligera*, **n. sp.**, diagnosed and described, pp. 155–158: WILSON (50).—*P. ventilabrum*: SCHEPOTIEFF (42) p. 3.

Sollasella hystrix T., redescribed : TOPSENT (50) pp. 142, 143.

Syringella humilis T., described, p. 138 ; *S. falcifera* T., redescribed, pp. 138, 139 : TOPSENT (50).

Tragosia infundibuliformis T. *polypoides* : MAR. BIOL. ASS. (34).

Family PÆCILOSCLERIDÆ.

Acarnus tortilis T., redescribed : TOPSENT (50) p. 171.

Artemisina erecta, **n. sp.**, described : TOPSENT (50) pp. 214, 215.

Biemma rosea (Fristedt) L., redescribed, pp. 226, 227 ; *B. grimaldii* T., redescribed, pp. 227, 228 : TOPSENT (50).

Bubaris vermiculata (Bowerbank) G., redescribed, pp. 145, 146 ; *B. mastophora* (Schmidt) T., redescribed, p. 146 ; *B. sosia*, **n. sp.**, described, p. 147 : TOPSENT (50).

Cerbaris T., definition of genus, p. 160 ; *C. torquata* T., redescribed, pp. 160, 161 : TOPSENT (50).

Chondrocladia gutteli, **n. sp.**, described : TOPSENT (50) pp. 207–209.

Dendoryx dentata, **n. sp.**, described : TOPSENT (50) pp. 172, 173.

Desmacella inornata B., redescribed : TOPSENT (50) pp. 225, 226.

Desmacidon peltatus, **n. sp.**, described, p. 204 ; *D. abyssi*, **n. sp.**, described, pp. 204, 205 : TOPSENT (50).

Drigmatyle, **n. g.**, defined, p. 195 ; *D. lictor*, **n. sp.**, described, p. 195 : TOPSENT (50).

Esperia stepanowi, *E. irregularis*, *E. muscoides*, *E. contarenii*, *E. foraminosa*, *E. dubia* : SOWINSKY (46) p. 289.

Esperella fasciibula, **n. sp.**, described, p. 201 ; *E. tunicata* (Schmidt) V., redescribed, pp. 200, 201 : TOPSENT (50).—*E. ægagropila*, bionomics : CUENOT (7).

Esperiopsis villosa C., redescribed, pp. 211, 212 ; *E. decora*, **n. sp.**, described, p. 212 ; *E. prædita* T., redescribed, p. 212 ; *E. glomeris*, **n. sp.**, described, pp. 213, 214 : TOPSENT (50).

Forcepia C., definition of genus, p. 177 ; *F. bulbosa* (Carter) V., redescribed, pp. 179, 180 ; *F. imperfecta*, **n. sp.**, described, p. 180 : TOPSENT (50).

Guitarra voluta, **n. sp.**, described : TOPSENT (50) pp. 209–211.

Hamacantha johnsoni (Bowerbank) G., redescribed, pp. 215–217 ; *H. schmidtii* (Carter) L., redescribed, pp. 217, 218 ; *H. carteri*, **n. sp.**, described, pp. 218–220 ; *H. lundbecki*, **n. sp.**, described, pp. 220, 221 ; *H. implicans* L., **n. var. azorica**, redescribed, pp. 221, 222 ; *H. integra*, **n. sp.**, described, pp. 222, 223 ; *H. clavisæpta* T., redescribed, pp. 223, 224 : TOPSENT (50).

Heteroclathria hallezi, **n. g.**, described : TOPSENT (50).

Hymenraphia B., definition of genus, p. 161 ; *H. clavata* B., redescribed, p. 161 ; *H. viridis* T., redescribed, p. 162 ; *H. spinispinosa*, **n. sp.**, described, p. 162 ; *H. affinis* T., redescribed, p. 163 ; *H. pilosella*, **n. sp.**, described, pp. 163, 164 ; *H. hispidula*, **n. sp.**, described, pp. 164, 165 ; *H. mucronata*, **n. sp.**, described, pp. 165, 166 ; *H. peachi* (Bowerbank) T., redescribed, p. 166 ; *H. mutabilis*, **n. sp.**, described, pp. 167, 168 : TOPSENT (50).

Hymenhabdia T., definition of genus, p. 159 ; *H. oxytrunca*, **n. sp.**, described, pp. 159, 160 : TOPSENT (50).

Hymetrochota, **n. g.**, definition of genus, p. 168 ; *H. rotula*, **n. sp.**, described, p. 168 : TOPSENT (50).

Iophon lamella, **n. sp.**, diagnosed and described, pp. 146–149 ; *I. lamella indivisus*, **n. subsp.**, diagnosed and described, pp. 149–151 ; *I. indentatus*, **n. sp.**, diagnosed and described, pp. 151–154 ; *I. chelifera osti magna*, **n. subsp.**, diagnosis and description, pp. 143–146 : WILSON (60).

- Joyeuxia* T., diagnosis of genus, p. 205; *J. viridis* T., redescribed, p. 206; *J. tubulosa*, **n. sp.**, described, pp. 206, 207: TOPSENT (50).
- Leptolabis*, **n. g.**, definition of genus, pp. 181, 182; *L. forcipula*, **n. sp.**, described, p. 182; *L. forcipula*, **n. var. brunnea**, described, p. 183; *L. arcuata*, **n. sp.**, described, pp. 183, 184; *L. luciensis* T., redescribed, pp. 184, 185: TOPSENT (50).—*L. luciensis*: MAR. BIOL. ASS. (34).
- Leptosia* T., definition of genus, p. 185; *L. occulta* (Bowerbank) T., redescribed, pp. 186, 187; *L. pecqueryi* T., redescribed, pp. 187, 188; *L. kœhleri* T., redescribed, p. 189; *L. schmidtii* T., redescribed, pp. 190, 191; *L. baculifera* T., redescribed, p. 191; *L. biscutella*, **n. sp.**, described, pp. 191, 192; *L. umbellifera*, **n. sp.**, described, p. 192; *L. raphigena*, **n. sp.**, described, pp. 192, 193; *L. obtusata*, **n. sp.**, described, p. 193; *L. acerata*, **n. sp.**, described, pp. 193, 194: TOPSENT (50).
- Leptostastræ*, **n. g.**, definition of genus, p. 194; *L. constellata*, **n. sp.**, described, pp. 194, 195: TOPSENT (50).
- Lissodendoryx simplex*, **n. sp.**, described, p. 173; *L. fertilior*, **n. sp.**, described, pp. 173, 174: TOPSENT (50).
- Melonanchora elliptica* C., redescribed: TOPSENT (50) p. 177.
- Microciona atrasanguineum*, bionomics: CUENOT (7).
- Myxilla paupertas* (Bowerbank) V., redescribed with list of synonyms, pp. 168, 169; *M. mariana* R. & D., **n. var. polysigma**, described, pp. 169, 170: TOPSENT (50).
- Phlyctænopora*, **n. g.**, definition of genus, pp. 198, 199; *P. bitorquis*, **n. sp.**, described, pp. 199, 200: TOPSENT (50).
- Plocamia ambigua* (Bowerbank) T., list of synonyms and descriptions, pp. 154, 155; *P. coriacea* (Bowerbank), var. *elegans* R. & D., redescribed, p. 155: TOPSENT (50).
- Plocamiopsis*, **n. g.**, definition of genus, p. 155; *P. signata*, **n. sp.**, described, pp. 155–157: TOPSENT (50).
- Protoesperia simplex*, *P. lobimana*: SOWINSKY (46) p. 328.
- Rhabderemia* T., description of genus and species, pp. 151, 152; *R. minutula* (Carter) T., redescribed, pp. 152, 153: TOPSENT (50).
- Rhabdoploca*, **n. g.**, definition of genus, pp. 157, 158; *R. curvispiculifera* (Carter), redescribed, pp. 158, 159: TOPSENT (50).
- Rhaphidotheca* S. K., definition of genus, p. 202; *R. loricata* T., redescribed, pp. 202, 203: TOPSENT (50).
- Stelodoryx*, **n. g.**, definition of genus, p. 174; *S. procera*, **n. sp.**, described, pp. 174–176: TOPSENT (50).
- Stylostichon repens*, **n. sp.**, described: TOPSENT (50) p. 170.
- Stylotella jullieni* T., redescribed: TOPSENT (50) p. 225.
- Suberotelites demonstrans* T., redescribed: TOPSENT (50) p. 157.
- Tedania suctoria* Sch., redescribed, p. 176; *T. commixta* R. & D., redescribed, pp. 176, 177: TOPSENT (50).
- Trachyforcepia*, **n. g.**, definition of genus, p. 181; *T. grænlandica* (F.), redescribed, p. 181: TOPSENT (50).
- Tylodesma* T., remarks on genus, pp. 135, 136; *T. alba*, **n. sp.**, diagnosed and described, pp. 136–138; *T. vestibularis*, **n. sp.**, diagnosed and described, pp. 139–142: WILSON (50).
- Yvesia pertusa* T., redescribed, p. 196; *Y. alecto* T., redescribed, pp. 196–198; *Y. carnosa*, **n. sp.**, described, p. 198: TOPSENT (50).

(iii) KERATOSA.

(a) DICTYOCERATINA.

Family SPONGIDÆ.

- Aplysinopsis massa*, **n. sp.**, described; *A. tuberosa*, **n. sp.**, described: SZYMAŃSKI (47).

Cacospongia, remarks re genus : SZYMAŃSKI (48).

Hircinia variabilis, **n. var. fistulata**, remarks on : SZYMAŃSKI (47, 48) ;

H. vestibulata, **n. sp.**, described : SZYMAŃSKI (48).

+*Phyllospongia lumbricaria*, *P. acuminata*, *P. elongata*, *P. subarticulata*,
P. latifrons, *P. varius* : WALTHER (57).

+*Spongites saxonicus* : JAHN (25).

Family SPONGELIDÆ.

Spongelia ramosa, nutrition in : COTTE (6).—*S. elegans*, *S. incrustans*, *S. palescens* : SOWINSKY (46) p. 289.

Spongillides from Roumania : CHIRICA (2).

(b) DENDROCERATINA.

Family DARWINELLIDÆ.

Darwinella simplex T., redescribed : TOPSENT (50) pp. 55, 56.

Family APLYSILLIDÆ.

+*Dendrospongia* vide *Craticularia* : JUKES-BROWNE & HILL (26) p. 506.

(iv) MYXOSPONGIDA.

Family HALISARCIDÆ.

Halisarca dujardini, *H. lobularis* : SOWINSKY (46) p. 289.—*H. dujardini* :
MAR. BIOL. ASS. (34).

E. OCTACTINELLIDA.

Vacant.

F. HETERACTINELLIDA.

Vacant.

G. INCERTÆ SEDIS.

+*Brachiolites*, vide *Craticularia* : JUKES-BROWNE & HILL (26) p. 505.

+*Cupulochonia cupuliformis*, *C. sp.*, *C. sabaudiana* : BAUMBERGER (1)
p. 21.

+*Hippalimeudon* sp. : BAUMBERGER (1) p. 21.

+*Monotheles stellata* : BAUMBERGER (1) p. 21.

Pellinula (?) *cribosa*, *P. schmidtii* : SOWINSKY (46) p. 328.

+*Scyphia romeri*, *S. caminensis*, *S. sp.* : ECK (10).—*S. pedunculata* : JAHN
(25).—*S. pedunculata* : JUKES-BROWNE & HILL (26) p. 508. (*Scyphia*
is a Dictyonine.)

+*Strephochetus*, **n. g.**, described : SEELY (45).

+*Satratrus brainerdi*, *S. ocellatus*, *S. prunus*, **n. spp.**, described : SEELY
(45).

+*Talpina dendrina*, *T. ramosa*, *T. solitaria* : JUKES-BROWNE & HILL (26)
p. 508.

Tedaniella cylindrigera : SOWINSKY (46) p. 328.

XVIII. PROTOZOA.

BY

H. M. WOODCOCK, D.Sc. (Lond.).

CONTENTS.

	Page
INTRODUCTION	3
I. TITLES.	6
II. BIOLOGY	
A. Morphology	28
1. General anatomy	28
2. Minute structure of cell-organs, special points	29
B. Physiology	30
1. Nutrition, excretion, etc.	30
2. Locomotion	30
3. Response to stimuli	31
C. Bionomics	31
1. Plankton	31
2. Parasitism: effects on host; relation to disease	32
D. Reproduction	34
1. Asexual	35
2. Sexual	35
3. Nuclear division; directive-centres, etc.	35
E. Development; life-cycle.	36
F. Group relationships; classificatory changes	37
G. Miscellaneous	37
1. Cultivation and infection	37
2. Technique	38
3. Bibliography, etc.	38
III. DISTRIBUTION.	
A. Geographical	38
B. Geological	39
C. Parasitic (including commensalism)	40

	Page
IV. SYSTEMATIC.	
A. Protozoa in general	42
B. Gymnomyxa	42
1. Mycetozoa	42
(a) Protomyxidea	42
(b) Mycetozoida	42
2. Rhizopoda	42
(a) Lobosa	42
(b) Foraminifera	43
3. Heliozoa	50
(a) Aphrothoraca	50
(b) Chlamydophora	50
(c) Chalarothoraca	50
(d) Desmothoraca	50
4. Radiolaria	50
(a) Peripylaria	50
(b) Acantharia	51
(c) Monopylaria	52
(d) Tripylaria	53
c. Sporozoa	54
1. Telosporidia	54
(a) Gregarinidea	54
(b) Coccidiidea	55
(c) Hæmosporidia	55
2. Neosporidia	56
(a) Myxosporidia	56
(b) Actinomyxidia	56
(c) Sarcosporidia	56
Sporozoa incertæ sedis	56
D. Mastigophora	57
1. Flagellata (Euflagellata)	57
(a) Lissoflagellata	57
(b) Choanoflagellata (vacant)	57
2. Silicoflagellata (vacant)	58
3. Dinoflagellata	58
(a) Adinida (vacant)	58
(b) Dinifera	58
4. Rhynchoflagellata	59
E. Ciliophora	59
1. Ciliata	59
(a) Holotricha	59
(b) Heterotricha	60
(c) Hypotricha	60
(d) Peritricha	60
2. Suctoria	60

INTRODUCTION.

THE number of Titles in the *Protozoa* Record for 1904 shows some falling off compared with that for the previous year, being 371 instead of 433. The Recorder attributes this diminution partly to the fact that the references were collected (by the Searcher) much earlier in the year than has hitherto been the case. It is notorious that many periodicals are not received by our Libraries until several months after publication; hence it is quite likely that there will be a certain influx into next year's Record of 1904 papers received too late for insertion in the present one. Nevertheless, allowance being made for the above circumstance, there seems little doubt that fewer, rather than more, Protozoan memoirs appeared in 1904. From many journals in which there were several papers in 1903 few or none have to be recorded this year. To give one example only: instead of over a dozen from the *Forschber. Plon*, two or three at most have been culled.

If, however, the present Record exhibits some loss in respect of the quantity of material, this is certainly not true of the quality. As regards the Flagellates, at any rate, the year 1904 must undoubtedly rank as one of the most important in the history of the group up till now. And not of this class alone has one's entire conception to be fundamentally modified as the result of last year's research! Rarely, if ever, the Recorder imagines, has the Protozoa division of the Zoological Record contained a memoir of such far-reaching—indeed, almost inestimable—significance as is herein included. By general consensus of opinion the stupendous revelation of SCHAUDINN (301) “inaugurates a new era in the history of the Sporozoa and Flagellates.”

For the benefit of any who are not already cognizant of this epoch-marking investigation, the main facts elucidated may be here stated. The author describes the complete life-cycle of two distinct organisms, one a Trypanosome, the other possessing the typical characters of a *Spirochæta*, both parasitic in the blood of the Little Owl. The latter parasite, far from being a Bacterium, is, in all essentials, a Trypanosome, and Schaudinn finds that the same is true for other so-called *Spirochæta*. Both these Flagellates have an alternation of hosts and of generations, the “carrier,” a gnat, being a true definitive host in which—and only in which—sexual conjugation takes place. Moreover, for part of the time spent in the blood of the bird, the Flagellate is intracellular, acquires a gregariniform condition, and becomes, in the case of the Trypanosome, what has hitherto been known as a species of *Halteridium*, and, in the case of the “*Spirochæta*,” what has previously been described as a “*Hæmameba*” or “*Leucocytozoon*.” In other words, two characteristic Hæmosporidian parasites are, respectively, only a transient phase in the life-history of a particular Hæmoflagellate!

So revolutionizing are these discoveries that, in view of the difficulty of the subject and the impossibility of following one and the same individual through its various phases, one might almost feel inclined to doubt the correctness of Schaudinn's interpretation of his observations; were it not for the fact that this author has already contributed such valuable additions to our knowledge of the complicated life-history of parasitic Protozoa. It is, therefore, casting no reflection on one who may be fittingly termed a “prince of protistologists,” to say that the corroborative evidence—in more than one direction—which is already forthcoming, is highly welcome (vide, for instance, MESNIL [234], BILLET [20], LÉGER [184 & 185], BRUMPT [48], and ROGERS [286]). In short, the whole tendency of research at present points to a very close connection between the Hæmosporidia and parasitic Flagellates.

Scarcely less important is the work of PROWAZEK (277 & 278) and of LÉGER. The former minutely describes the complicated life-history of several other parasitic Flagellates, and his memoirs are of great value to students of the group. Thanks to these contributions and that of Schaudinn, the pronounced scepticism of Klebs, Senn, and others with regard to the occurrence of a sexual process in this class, which has hitherto considerably hampered real progress, is now completely refuted, and the views of Kent and of Dallinger and Drysdale are at length vindicated.

To LÉGER are due practically all the data we possess to aid us in arriving at a correct idea of the phylogeny of the *Hæmoflagellates*. From his most fortunate redescription (180 & 181) of *Trypanoplasma borreli*, on the one hand, and from the instructive series of *Herpetomonadine* forms which he reveals (186 & 187) on the other hand, it seems abundantly clear that a heterophyletic origin must be assigned to the parasites included in the designation of "Trypanosomes."

There yet remain one or two researches on parasitic Flagellates which ought not to be passed over without mention. The Recorder refers to the interesting and particularly well-illustrated accounts by FOA (110) and GRASSI & FOA (126) of the process of division in members of the curious group of the *Trichonymphidæ*.

Although memoirs dealing with the Flagellates occupy by far the most important place in the section for Morphology and Development, there are, nevertheless, certain others to which allusion must be made. PENARD (260) has had an opportunity of examining *Chlamydomyxa*, and helps to clear up several disputed points, e.g., the nature of the "travelling corpuscles." Other *Gymnomyxan* papers are those by CALKINS (57), who produces evidence in favour of a sexual cycle in *Amæba proteus* and strongly inclines to the belief that the sexual phases are represented by "*Pelomyxa*"-forms, and ZÜLZER (369), who contributes a full account of *Diffugia urceolata*. In (113) FOWLER supplements his work on the Tripylarian *Planktonetta* with a note on the anatomy of *Gazelletta*.

Turning to the Sporozoa, a useful comparative description of the growth and development of Gregarines up to the adult trophozoite-phase is furnished by LÜHE (209); and LÉGER & DUBOSCQ (192) bring forward additional original observations dealing with this subject. A most interesting description of the formation of gametes and conjugation in *Stylorhynchus* is given by LÉGER (188). An important Myxosporidian paper is that of STEPELL (336) on the development of the cyst and spores in *Glugea anomala*. WOODCOCK (361) has studied "diffuse infiltration" in *G. stephani*, and offers an explanation of this condition, as there seen. Welcome additions to our knowledge of the Actinomyxidæ are contributed by CAULLERY & MESNIL (64 & 65) and LÉGER (182 & 183). Finally, the occurrence of a remarkable parasite is noted by WOODCOCK (362), who has, unfortunately, been unable so far to learn much concerning its life-history and affinities.

Apart from the conscientious description of conjugation in *Paramæcium* by HAMBURGER (134), research on the Ciliates has been chiefly with respect to their minute structure. LÉGER—to whom Protozoology, this year, owes much indeed!—and DUBOSCQ (193–195), after a consideration of certain parasitic *Opalinidæ*, come to the conclusion that the *Astomata* do not represent a natural group. The numerous papers of FAURÉ have proved a veritable thorn in the flesh to the Recorder. No less than five (95, 98–101), are taken up in describing the contractile fixative apparatus of the Vorticellids, and the labour required to piece them together and obtain a definite idea of the whole is by no means slight. It is the more pity that the author did not combine these scrappy fragments into a finished memoir, since the conclusion to which he comes with regard to

the origin of the *Discotricha* distinctly merits attention. MITROPHANOW (239, 241), minutely describes the formation and structure of the trichocysts of *Paramœcium*, and thinks that they subserve an excretory purpose.

Protozoan Physiology has certainly been enriched by CALKIN's studies on *Paramœcium*. At the close of a remarkably painstaking series of researches this writer comes to the conclusion (56) that, in the long run, conjugation is essential for the continuance of the race. From JENNING's work (152) it would appear that, between living protoplasm and the most artful of physical imitations, there lies a gulf, to bridge which will require much more than, for instance, Mr Burke's "radiobes."

To mention *Actinosphærium* is to think of R. HERTWIG, and his investigations on the relation between cell-metabolism and functional degeneration, which have been largely worked out on this form, are fully recounted in (138). Too much importance cannot be attached, in the Recorder's opinion, to this author's highly suggestive ideas concerning the real nature of malignant tumours, in which the cells lose their "organotypic" growth and activity, and retain only that of a "cytotypic" character.

The rôle played by Protozoa in medical parasitology still gains in importance. The etiology of various Oriental maladies, such as Kala-Azar, tropical splenomegaly, Delhi sore, and bouton d'Orient, is now explained by the discovery of parasites closely allied to *Piroplasma* (vide CHRISTOPHERS (73-75), DONOVAN (83), LAVERAN & MESNIL (173), LEISHMAN (196), MESNIL, NICOLLE & REMLINGER (235), WRIGHT (367), and others). Moreover, it appears not unlikely that the once dreadful scourge of small-pox is also to be ascribed to the ravages of a minute Sporozoan parasite. CALKINS (58) gives a detailed account of the bodies known as "*Cytoryctes variolæ*," considers them as phases of a distinct organism allied to *Lymphosporidium*, and constructs a complex life-history for the parasite. This much, at any rate, may be said. In view of the fact that Calkins is a most competent protozoologist, far more weight must be attached to his research than is necessary in many cases where the Protozoan nature of cell-inclusions is confidently asserted!

For various works on Geographical Distribution the reader is referred to the papers by CASH, GILSON, GOUGH, HÄCKER, HUTTON, JENSEN, MILLETT, MONTI, NOBRE, PENARD, SIDEBOTTOM & WORTH, and on Geological Distribution to those by BAGG, BRÜCKMANN, CHAPMAN, FORNASINI, HOLLAND, JUKES-BROWNE, LEARDI, MARTELLI, MARTIN, PREVER, READE, SCHLUMBERGER, SCHUBERT, SILVESTRI and others.

The rich Gymnomyxan fauna of the Lake of Geneva has supplied PENARD with material for his paper (259) on some new Rhizopods, and also for his monographic work (262) on fresh-water Heliozoa. That there is no lack of interesting forms nearer home is shown by CASH (60). Coming to the Foraminifera, an important memoir on *Lepidocyclus* is contributed by LEMOINE & DOUVILLÉ (201). The *Orbitoideæ* have been well looked after by PREVER (272 & 274), PREVER & RZEHA (276) and SCHLUMBERGER (305), attention having been paid chiefly to the genus *Orthophragmina*. PREVER also continues (in 275) his study on the forms included in the term "*Nummulites*." MILLETT (236 & 237) at length concludes his description of Recent Malayan Foraminifera. There are several other Systematic papers on this order which should not be neglected, e.g., those of BRÜCKMANN (46), CHAPMAN (69-71), CHECCHIA-RISPOLI (72), and SCHLUMBERGER & CHOFFAT (306).

As a result of the German plankton and deep-sea expeditions, rather more Radiolarian memoirs than of late have to be chronicled. BORGER (28), HÄCKER (132), and IMMERMANN (148) deal with the Tripylaria, the last-named contributing a useful account of the *Aulacanthidæ*. POPOFSKY (270) has produced a bulky work on the *Acanthometrea*. It may be very

important, but the Recorder confesses that the chief point about it which struck him is the manifest desire of the author to tack on his name (in the abbreviated form of "Pop.") to every nomenclaturic change or addition suggested. Nowhere in his description is n. g., n. sp., or the like to be found. Fortunately for the Recorder the Acantharia do not seem to have been previously honoured by Popofsky's attention, so he has felt justified in replacing "Pop." by the correct designation, so far as he was able to ascertain it from the context.

Many new *Hæmogregarines* have been observed, chiefly by BILLET (21-24), CASTELLANI & WILLEY (63), NICOLLE (247-249), SERGENT (314), and SOULIÉ (327); also, usually associated with new *Trypanosomes*, by BRUMPT & LEBAILLY (50) and LEBAILLY (179). Lastly, a full account of *Trypanosomes* known up to the time of writing is given by LAVERAN & MESNIL (176). This work, compiled as it is very largely from original papers by the authors, affords a good idea of the amount of research bestowed by them upon these all-important parasites.

Besides the works on Ciliates above referred to, mention may be made of FAURÉ'S paper (105) on new *Operculariæ*. The systematic list of the Infusoria is, however, much shorter than last year, while the sole entry under *Tentaculifera* is that of *Astrophrya*, a new genus described by AVERINTZEV (6).

I. TITLES*.

1. [ANON.] Section "Protozoa" in Intern. Cat. Scient. Lit. 1904 (ii), pp. 415-433. [See II. G. 3.]
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II. BIOLOGY.

A. MORPHOLOGY.

1. General Anatomy.

(a) *Gymnomyxa*:—

Description of *Chlamydomyxa montana*, PENARD (260).

Interesting new British Rhizopods described, CASH (60).

Detailed account of *Diffugia urceolata*, ZUELZER (369); general description of *Entamæba buccalis* n. sp., PROWAZEK (279).

Microspheric form of *Cyclammima cancellata* described, SILVESTRI (320); note on a variety of *Virgulina screibersiana*, id. (319); description of *Triticites*, a new genus of Foraminifera, GIRTY (120).

General account of the morphology of the Heliozoa, PENARD (262).

Full account of the structure of the *Aulacanthide*, IMMERMANN (148); of the *Acanthometrea*, POPOFSKY (270).

Note on the anatomy of *Gazelletta*, FOWLER (113).

(b) *Sporozoa*:—

Short account of new Sporozoa, *Gregarina marteli*, *Diplocystis clerci* and *Adelea transita*, LÉGER (189).

General description of: the form and structure of Gregarines, LÜHE (209); *Gregarina ovata*, PAEHLER (256); the trophozoites of *Urospora lagidis*, BRASIL (41).

Preliminary note on "neogamy" or precocious association in Gregarines (*Cystobia* and *Diplocystis*), WOODCOCK (364).

Short account of a new Coccidian, *Angeiocystis audouinia*, BRASIL (40).

Short account of: a new Hæniogregarine, *Hæmocystidium*, CASTELLANI & WILLEY (63); several new Hæmogregarines, BILLET (21-24), DUCLOUX (88) & NICOLLE (247-249); *Hæmogregarina mauritanica* n. sp., from a land tortoise, SERGENT (314).

Notes on: the parasite of tropical splenomegaly, Kala-Azar, etc. (*Piroplasma donovani*), BENTLEY (16), CHRISTOPHERS (74 & 75), DONOVAN (83) and LAVERAN & MESNIL (173); the Protozoan parasite (allied to *Piroplasma donovani*) causing Delhi boil, etc. in man, MESNIL, NICOLLE & REMLINGER (235), & WRIGHT (367).

Account of: *Thelohania legeri* n. sp., HESSE (140); *T. mænadis* n. sp., PÉREZ (263).

Description of a new type of Actinomyxidial, *Sphæractinomyxon stolci*, CAULLERY & MESNIL (64).

Further notes on *Joyeuxella toxoides*, BRASIL (41).

Note on a remarkable Sporozoan parasite, *Lymphocystis johnstonei* n. g., n. sp., WOODCOCK (362).

(c) *Mastigophora*:—

Full account of: the morphology and form-variety of *Trypanosoma (Halteridium) noctuæ*, and *Spirochæta* ("Hamamæba," "Leucocytozoon") *ziemanni*, SCHAUDINN (301); certain parasitic Flagellates (*Trichomastix lacertæ*, *Bodo lacertæ*, and *Trichomonas lacertæ* n. sp.), PROWAZEK (278); *Herpetomonas muscæ-domesticæ*, id. (277).

Description of *H. subulata* n. sp., monadiform and gregariniform phases, LÉGER (186); *Trypanophis* (n. g. for *Trypanosoma grobbeni*), a very interesting form, KEYSSELITZ (156).

Important redescription of the morphology of *Trypanoplasma borreli*, LÉGER (180).

Account of: a new avian Trypanosome, *Trypanosoma paddæ*, LAVERAN & MESNIL (176) & THIROUX (342); new piscine ones, *T. abramis*, *T. danielowskyi* and *T. tinca*, LAVERAN & MESNIL (176); *T. inopinatum* n. sp.,

from the green frog, differing greatly from the Amphibian type, SERGENT (313); *T. nelspruitense* n. sp., LAVERAN (171); *T. barbatulae* n. sp., and *Trypanoplasma varium* n. sp., LÉGER (184 & 185).

Different forms of *T. dimorphon* Dutton & Todd, described, LAVERAN & MESNIL (174); notes on *T. equiperdum* of Dourine, LINGARD (204).

Reasons for considering the non-flagellate end of a Trypanosome the anterior one, GUIART (129).

Description of *Joenia annectens*, GRASSI & FOA (126).

Brief account of a new Flagellate, *Ocyglossa velox*, of remarkable body-form, GIARD (116).

(d) Ciliophora:—

General description of: two new Infusoria, *Anoplophrya brasili* and *Opalina saturnalis*, LÉGER & DUBOSCQ (193, brief account) & (194 & 195); the parasitic Infusoria *Discophrya gigantea* and *Opalina intestinalis*, COHN (77); *Anophrys echini* n. sp., DI MAURO (231); new *Opercularia*, FAURÉ (105); a new colony-forming Infusorian, *Opercularia clepsinis*, POPOW (271).

Account of a new Suctorian, *Astrophrya arenaria* n. g., n. sp., AVERINTZEV (6).

2. Minute structure of cell-organs.

(a) Membrane, test, shell:—

Structure of the test of *Diffugia urceolata*, ZUELZER (369).

Note on the structure of the shells of porcellanous Foraminifera, CHAPMAN (68).—Structural characters of the shell of floating Foraminifera, and its adaptation to this mode of life, KEMNA (155).

On the chemical nature of the so-called acanthin skeleton of the *Acanthometrea*, SCHEWIAKOFF (303).

Double nature of the envelope around *Hæmogregarina tunisiensis* in the encysted endoglobular condition, BILLET (21).

Nature of the enveloping shell or "house" in the *Vaginicolinæ*, FAURÉ (104).

Arenaceous "house" of *Astrophrya*, a new Suctorian, AVERINTZEV (6).

(b) Nucleus and cytoplasm:—

Minute description of the cytological appearances and changes occurring during "alteration" and physiological degeneration in *Actinosphaerium*, HERTWIG (138).

Cytological details in *Dicercomonas muris*, FOA (109).—Details of cytological structure in *Trypanoplasma borreli*, LÉGER (181).—Minute structure of *Anoplophrya brasili* and *Opalina saturnalis*, LÉGER & DUBOSCQ (194 & 195).

Minute structure of karyoplasm and cytoplasm of *Vorticellidæ*; proteid spherules ("tonoplasts") in endoplasm; ultimate nature of the cytoplasm, FAURÉ (96); further remarks on the nature and function of the tonoplasts in Ciliates, id. (97).

Minute structure of nucleus and cytoplasm in Gregarines; comparative account, LÜHE (209).—Nucleus and cytoplasm in *Gregarina ovata*, PAEHLER (256).—Occurrence of large irregular vegetative nuclei in the cysts of *Glugea anomala*, STEMPER (336).

Nuclear structure and changes in a Trypanosome of the rabbit, BOSC (34). [The Rec. is sceptical about many of the appearances depicted, which are perhaps artifacts. The author's figg. are very unconvincing.]

Nuclear structure of *Discophrya gigantea* and *Opalina intestinalis*, COHN (77).—Nuclear apparatus of *Paramœcium*, MITROPHANOW (239); changes in same, CHAINSKY (67) & PETSCHENKO (267).

On the chromidia and chromidial apparatus of various Protozoa in relation to the nucleus, GOLDSCHMIDT (123).

Occurrence of nuclear changes in *Opalina ranarum* which are thought to represent the differentiation of a micro- (or sexual) nucleus, LOEWENTHAL (206).

Well-differentiated ectoplasmic layer in *Trypanophis*; little ectoplasmic cap and beak at the anterior end, KEYSSELITZ (156).

Structure and formation of the trichocysts in *Paramœcium*, MITROPHANOW (239).

On the discharge of the contractile vacuole in *Amœba terricola*, PENARD (261).—The excretory canals of *Discophrya*, COHN (77).

On the hydrostatic apparatus of the *Acanthometrea*, SCHEWIAKOFF (303).

Plastogamy in *Diffugia urceolata*; detailed account of the chromidial substance in this form, ZÜLZER (369).

(c) Organs of attachment and movement:—

Structure of the filamentous pseudopodia of *Chlamydomyxa montana*; distinction of the "travelling corpuscles" from the nuclei, PENARD (260).

Cuticular striations, muscle-fibrillæ, etc., in *Gregarina ovata*, PAEHLER (256).

The basal corpuscles of Infusoria (*Paramœcium*, *Carchesium*) are of mechanical importance as points of insertion or attachment of the vibratile organellæ, MITROPHANOW (238).

Structural details of the peristome and ciliary apparatus in *Tintinnus*, SHVEIER (316).

Intimate structure of the contractile and fixative apparatus of various Vorticellids, FAURÉ (95, 98, 99 & 101). In its highest development (*Vorticella* and *Carchesium*) the peduncle consists of a basal portion or "scopula," an external elastic sheath, and a central contractile axis; the latter is again differentiated into a central "spasmonema" of united myonemes, and an outer plasmic cord.

On the elastic thread in the stalk of *Vorticella*, BRANDES (39).

B. PHYSIOLOGY.

1. Nutrition, excretion, osmosis, etc.

On the rôle played by Protozoa in the purification of rivers, by feeding on organic material, Bacteria, etc., WEIGELT (354).

Prolonged functional activity and metabolic interchange in *Actinosphaerium*, brings on "depression" and ultimately physiological degeneration; analogy between the cellular reactions in such a case, and those resulting in malignant growths in Metazoa, HERTWIG (138).

Relations between general metabolism and the process of division in *Stentor*, and the different liquids (solutions of salts, infusions, etc.) in which the animals were maintained, PETERS (265).

Hunger-periods associated with conjugation in *Dileptus*, HERTWIG (139).

The trichocysts of *Paramœcium* function as an excretory apparatus, MITROPHANOW (239).

Investigations on *Spirostomum* lead to the conclusion that respiration goes on only in the cytoplasmic constituent of the cell, and not in the nucleus, VERWORN (351).

Adipogenic function in *Vorticella convallaria*; associated production of a pigment (lipochrome?) and abundant fat grains, and subsequent expulsion "en masse"; epidemic occurrence of this "*V. citrina*"-phase, FAURÉ (102).

2. Locomotion.

Remarks on the movement of Gregarines, LÜHE (209).

Locomotion in *Ocyglossa*, a new Flagellate, is principally by the con-

traction of a median, tongue-like, posterior prolongation of the body, GIARD (116).

Considerations with regard to the movement of *Trypanophis*, KEYSSELITZ (156).

3. Response to stimuli; effect of reagents.

Physiological experiments on *Trypanosoma brucei* and *T. equinum*; action of warmth, disinfectants, conservation-media, etc. on the parasites, JAKIMOFF (150).

Vitality of *T. granulosum* in human and other sera; destructive effect of water and other hypotonic liquids on the parasites, SABRAZÈS & MURATET (296).

Human serum has a slight action on the *T.* of horses in Gambia (*T. dimorphon*) but none on the human parasite (*T. gambiense*); arsenic acid exerts some influence on the latter, however, LAVERAN (164).

"Trypanoth" has little or no permanent effect on Trypanosomes, especially on *T. gambiense*, LAVERAN (166).

Cytoplasmic reactions of *Paramœcium* (as indicated by staining propensity) to chemotactic influences, BARRATT (10); effects of acids and bases on *P.*, id. (11).

Relation of the physical structure of the protoplasm in *Paramœcium* to the reactions of the organism towards thermal, chemical and electrical stimuli, GREELEY (127).

Effects of chemical and electrical stimuli on the myonemes of the hydrostatic apparatus in the *Acanthometrea*, SCHEWIAKOFF (303).

"Galvanotropism" (movement, or change in direction of movement, induced by electric current) and "galvanotaxis" (change of position, axial direction) in various Infusoria, STATKEWITSCH (333).

Galvanotaxis in *Spirostomum*; reactions of the Infusorian towards electric currents of different strengths, WALLENGREN (352).

Physiological effects of radium on various Protozoa (*Amœba*, *Nassula*, *Trypanosoma*), SALOMONSEN & DREYER (297).—Action of radium on *Opalina ranarum*, VENEZIANI (348).

Action of light-rays (mostly chemical) on Infusoria (*Paramœcium* and *Colpidium*), HERTEL (137).—The significance of pigment in light-perception by the Protozoan cell, HALBEN (133).

C. BIONOMICS.

1. Plankton.

Protozoan plankton (mostly Peridinida) collected in the North Atlantic (57°–60°), OSTENFELD & PAULSEN (255).—Atlantic plankton, Tripylaria, many n. spp., BORGERT (28).—Plankton distribution in the Atlantic: of the *Aulacanthida*, IMMERMANN (148); of the *Acanthometrea*, POPOFSKY (270).

Abundant occurrence of *Noctiluca miliaris*, forming a great shoal, off the Scilly Isles, BROWNE (45).—Tay Basin, Protozoan plankton occurring, mostly Peridinida, MURRAY (245 & 246).

Dinoflagellate plankton from Iceland, PAULSEN (258).—In plankton from North Sea and Skagerack, two new marine species of Heliozoa, OSTENFELD (254).—Protozoan plankton of Danish seas, WESENBERG-LUND (356).

Plankton from Ausgraben lakelets near Plön (Dinoflagellates), LEMMERMANN (198).—Protozoan plankton from various ponds and lakelets in Thuringia, Saxony, and elsewhere, ZACHARIAS (368).—*Ceratium hirundinella* in plankton, Alpine lakelets, BREHM & ZEDERBAUER (42).

Radiolarian plankton, Gulf of Capri, LO BIANCO (205).

Plankton from Quarnero (Hungary), chiefly Tintinnids, ENTZ (93).

Protozoan plankton from : river Seim (tributary of the Dnieper), ZYKOFF (370) ; Lake Selig (Gov. Tver), id. (371) ; the Neva and Lake Ladoga, SKORIKOW (324).

In plankton from the Volga (Woloshka), *Astrophrya*, a new Suctorian, AVERINTZEV (6).

Plankton from : Turkestan, Protozoa, listed, v. DADAY (79) ; River Murgab (Merv, Turkestan), Protozoa, MEISSNER (233).

Protozoan plankton collected on a voyage to and from Bombay, CLEVE (76).

In plankton, Lake Erie, a new *Chlamydomonas*, SNOW (326).

2. Parasitism, effects on host : relation to disease.

[For infection, transmission, see II. G. 1 ; and for hosts, III. C.]

Biological peculiarity of *Chlamydomyxa montana*. This organism, though itself no longer actually parasitic or saprophytic, always occurs in the putrid liquid around decaying and half-decomposed *Hypnum*-moss. PENARD (260) looks upon this habitat as reminiscent of an ancestral parasitic or saprophytic one.

Destruction of nucleus in *Amæba* by fungal parasite, GRUBER (128).

Gregarinosis:—

Relations between growing Gregarines and the intestinal host-cells, LÉGER & DUBOSCQ (192).

Relations between *Urospora lagidis*, in the trophic and sporulating phases, and the cœlomic phagocytes of its host, *Audouinia* ; healthy parasites appear quite uninjured by the phagocytes, BRASIL (41).

Coccidiosis:—

Harmful effects of *Diplocystis clerici* on its host, when strongly infected, LÉGER (189).—Attachment of *Doliocystis pellucida* to its intestinal host-cell, BRASIL (41).

Haemosporidiosis:—

Karyolysis of the blood-corpuscles brought about by *Hæmogregarina viperini* and *H. sergentium*, BILLET (22) & NICOLLE (248) ; relation of *H. curvirostris* to the nucleus of the corpuscle, BILLET (24).

The occurrence of paranuclear corpuscles in the hæmatids of tortoises infected with *Hæmogregarina* perhaps stands in relation with the presence of these parasites, even though not all the hæmatids exhibiting this karyolysis are actually parasitized, BILLET (25).

Piroplasmosis:—

The different piroplasmoses of cattle, with figures of the parasites (unspecified), DSCHUNKOWSKY & LUHS (86).

Canine piroplasmosis, general account, GALLI-VALERIO (115).—A study of canine piroplasmosis and the tick which conveys the disease, BOWHILL & LE DOUX (38), also NUTTALL (252).—On the immunization of dogs against *Piroplasma canis*, THEILER (341).

Can *Piroplasma bigeminum* live in the human blood ? Difficulty of distinguishing certain forms of this parasite from certain of those exhibited by the parasite of benign tertian malaria, LINGARD (203).

Good figures showing the relation of *Piroplasma donovani* to the leucocytes and blood-corpuscles are given by DONOVAN (83).—Minute forms of *P. d.*, free or endoglobular, in the peripheral circulation, LAVERAN & MESNIL (173).

“Leishman-Donovan” bodies (*Piroplasma donovani*) in persons suffering from tropical splenomegaly ; their relation to the splenic cells and leucocytes of the host ; nature of the “matrix” ; comparison with other *Piroplasmata* and involution forms of Trypanosomes, CASTELLANI (61), CHRISTOPHERS

(73-75), LEISHMAN (196), MANSON & LOW (219 & 220), and MARCHAND & LEDINGHAM (223).

Kala-Azar, general account of the disease and its parasite, RUATA (293).

Delhi boil, "bouton d'Alep," and like maladies caused by a Protozoan parasite ("*Helcosoma tropicum*, WRIGHT [367]); this parasite is almost certainly a *Piroplasma*, and closely allied to *P. donovani*, MESNIL, NICOLLE & REMLINGER (235).

Account of "spotted fever" or "tick-fever" of the Rockies; a true human piroplasmosis caused by *P. hominis* n. sp., WILSON & CHOWNING (360).

Trypanosomosis:—(BLANCHARD (27) maintains that the term *trypanosomosis* is the correct one to use for diseases due to Trypanosomes, for the following reasons:—(a) it has priority over all others, having been proposed by BRUMPT, 1901; (b) it is pure and not a latinized hybrid like *trypanosomiasis*; (c) it agrees with the nomenclature of all other Protozoan diseases. [The Recorder lays stress on this point, which he has consistently supported.]

Sleeping-sickness and other trypanosomoses (general review), D'ESPINE & YUNG (94).—Trypanosomes and sleeping-sickness, BRODEN (43 & 44), HODGES (142), and SAMBON (298).—Sleeping sickness, its parasite and transmissive agent, STEPHENS (338).—Human trypanosomosis; general account of the parasite, its relation to others, and the course of the disease, RUATA (292).—Trypanosomoses (including sleeping-sickness) and tse-tse flies, BLANCHARD (27).

Sleeping-sickness experimentally produced in many animals (e.g. mice, rats, guinea-pigs, rabbits, dogs, monkeys); the behaviour of the trypanosomes and their effect upon the hosts agrees with the observations of Dutton & Todd on the parasite of *T.*-fever; hence one and the same Trypanosome is concerned in both cases, BRUMPT & WURTZ (51-53).—Essentially similar pathogenic behaviour of *T. gambiense* Dutton and *T. ugandense* Castellani, LAVERAN (165).—The Trypanosome of sleeping-sickness in Uganda and Congo Free State identical with *T. gambiense*, DUTTON, TODD & CHRISTY (89), also THOMAS & LINTON (343).

The trypanosomosis known as Aino, occurring in Somaliland (Ogaden) is, BRUMPT (47) thinks, probably the same as Nagana.—A trypanosomosis of Dromedaries in Algeria allied to Mbori (Timbuctoo); effects of the parasites on different animals, SERGENT (311 & 312).—Trypanosomoses in French West Africa, LAVERAN (168).—Existence of an equine trypanosomosis (probably a distinct variety) in French Guinea, id. (169).—A trypanosomosis among cattle, horses, mules, donkeys in Mauritius, EDINGTON (91).—Trypanosomosis in a rabbit, PETRIE (266).

The trypanosomes of Surra and Mbori appear to be identical and animals immunized against the one disease are immune to the other, VALLÉE & PANISSET (347).

Nagana-infection (*T. brucei*) in the guinea-pig, MARKL (225).—Nagana and *T. brucei*, full account of, SCHILLING (304).

Infection of rats and mice with *T. equiperdum* of Dourine; remarks on Algerian trypanosomoses, ROUGET (291).—The lesions of Dourine and the relation of the parasite (*T. equiperdum*) to them, LINGARD (204).

Effects of *T. dimorphon* on horses, LAVERAN & MESNIL (174).

T. theileri (?) in cattle in German East Africa, PANSE (257).

Immunity of *Cynocephalidae* against various trypanosomoses; activity of their serum on the parasites, LAVERAN (167).

Detailed account of the relation between *Trypanosoma noctuæ* and the cells and tissues of its hosts, both Avian and Insectan; endoglobular phases; also for *Spirochæta ziemanni*, SCHAUDINN (301).—*T. inopinatum* certainly penetrates the red blood corpuscles of the frog, becoming endo-

globular, BILLET (26).—Observations pointing to an endoglobular phase in the life-history of a Trypanosome (not unlike *Piroplasma donovani*), MOORE (243).

Myxosporidiosis:—

Thelohania mænadis does not appear to injure to any extent the infected *Carcinus*, though the host's muscles may be infested with it, PEREZ (263).

Severe epidemics of "Drehkrankheit" (characterized by spasmodic irregular movement) in young rainbow-trout, due to *Lentospora cerebralis*; relation of the parasites to the host's tissue [see also III. c.], PLEHN (269).

Relation between the host's tissue and the parasitic invasion in the case of *Glugea stephani*; "pseudocysts" the result of a condition of diffuse infiltration, WOODCOCK (361).

Protozoa and other diseases:—

The development of the Amœba of tropical dysentery (*Entamoeba histolytica*) shews that it is distinct from *E. coli*, LESAGE (202).—*Amœba coli* and its relation to so-called tropical dysentery and hepatic abscess, VERDUN (350).—Amœbic dysentery in Ceylon, CASTELLANI (62).

Cysts of *Trichomonas intestinalis* and *Megastoma entericum* in human faeces, UCKE (346).

Cytoryctes variolæ certainly seems to be the cause of small-pox; relation of the parasite to the cells and nuclei of the lesions in this disease fully described, CALKINS (58).—The "vaccine" bodies are phases of an organism very closely allied to *Cytoryctes variolæ* if not identical; the difference between the effects in the two cases (small-pox and vaccinia) is apparently due to the fact that in the latter the parasite does not become intranuclear, TYZZER (345).

Inoculation of Monkeys (*Rhesus* and *Macacus*) with small-pox virus; occurrence of different forms of the parasite (*Cytoryctes*) which are described, MAGRATH & BRINCKERHOFF (218).

Photomicrographs of the small-pox parasite, shewing its relation to the cells and nuclei, COUNCILMAN, MAGRATH & BRINCKERHOFF (78).

The supposed Protozoan parasite of vaccinia (cow-pox and horse-pox)—[most unsuitably termed "*Plasmodium*" vaccine]—and its relation to the malady discussed, BOSC (32 & 33).

DE KORTÉ (161) describes what he considers as the Protozoan parasite of small-pox and vaccinia, terming it "*Amœba variolæ*."

SEIGEL (318) considers the cause of vaccinia to be a peculiar spore-forming parasite of Sporozoan affinity, readily found in the kidney-tissue.

BOSC (29-31) maintains the parasitic nature of the inclusions in cancerous cells, regarding them as Protozoa. He compares these organisms [?] with the bodies he has found in "clavelée," small-pox, vaccinia, etc.

SCHUBERG (308) points out that Feinberg [Zool. Rec. 1903 (109)] has mistaken for "intestinal cysts filled with Coccidia" what are really *Cysticerci* of a tape-worm! It would follow, therefore, that much reliance cannot be placed upon the Protozoan nature of his cancer-inclusions.

The "one and only true cancer parasite" has again revealed itself, this time to SCHÜLLER (310), who regards it as a Protozoan and gives numerous unconvincing figures of it.

According to LUZZANI (214) a Protozoan parasite has been observed in a case of hydrophobia, and is considered to be the cause.

D. REPRODUCTION.

Comparative review of the different modes of reproduction in the Protozoa, and their classification, HARTMANN (135).

1. Asexual: fission, schizogony, etc.

Schizogony in *Adelea transita* n. sp., LÉGER (189).—Schizogony of *Klossiella* described and compared with that of *Caryotropha mesnili*, WOODCOCK (363).

Schizogony of: *Hæmogregarina biretorta*, NICOLLE (249); *H. mauritanica* n. sp., 8 merozoites being formed, SERGENT (314).

Meronts and merogony in *Thelohania legeri*, HESSE (141).—Schizogonous multiplication in *T. mænadis* n. sp., PEREZ (263).

Asexual multiplication (binary fission and multiple rosette-formation) in *Herpetomonas muscæ-domesticeæ*, PROWAZEK (277).—Multiplication by longitudinal fission of *H. subulata*, LÉGER (186).—Process of division described: in *Joenia annectens*, GRASSI & FOA (126); in *Trichonympha agilis*, FOA (110).—Multiplication of *Trypanosoma granulosum* by unequal division, SABRAZES & MURATET (295).

Fission in *Anophrys echini* n. sp., DI MAURO (231).—Division in *Discophrya* and *Opalina intestinalis*, COHN (77).

2. Sexual: gametes and conjugation.

On the general significance of conjugation, CALKINS (56).—Notes on conjugation ("exogamy") in certain Protozoa, HARTOG (136).

"Association" and conjugation in *Diffugia urceolata*, ZÜLZER (369).—Evidences pointing to sexual (*Pelomyxa*-) forms in the life-history of *Amœba proteus*, CALKINS (57).

Formation of gametes (sporoblasts) in *Gregarina ovata*, PAEHLER (256).—Markedly anisogamous conjugation in *Stylorhynchus*; certain very motile, spermatozoon-like, male elements are sterile and have acquired a subsidiary function, LÉGER (188).

Two types of form (micro- and megagametocytes?) and multiplication (micro- and megagamete-formation?) in *Joyeuxella*, BRASIL (41). [These two types of multiplication seem to the Recorder to possess a certain agreement with what occurs in *Schaudinnella* (Nusbaum, Zool. Rec. 1903 [282]) and suggest that the affinities of *J.* may be sought in that direction.]

Micro- and megagametocytes in *Adelea transita*, LÉGER (189); (association observed but not actual gamete-formation).—Micro- and megagametocytes and microgametes of *Angeiocystis*, a new Coccidian, described, BRASIL (40).

Distinction of male and female forms (gametocytes) in "*Leucocytozoon*" *danilewskyi*, BERESTNEFF (18).

Important account of the sexual process in certain parasitic Flagellates; autogamy (or self-fertilization) in *Trichomastix*, and heterogamy (true sexual conjugation) as well as autogamy in *Bodo*; comparison with the heterogamy of *Trichomonas*, PROWAZEK (278).—Sexual processes (fertilization, "etho-genesis" or male autogamy, and parthenogenesis) in *Herpetomonas muscæ-domesticeæ*, id. (277).

True conjugation in *Trypanosoma noctuæ* and *Spirochaeta ziemanni*, taking place in the gnat, described, SCHAUDINN (301).

Note on conjugation in *Dileptus gigas*, HERTWIG (139).—Conjugation in *Paramœcium bursaria* described, HAMBURGER (134).

3. Nuclear division: directive centres, etc.

Description of nuclear division in *Amœba proteus*, AVERINTZEV (7).—Nuclear changes, fragmentation, and the significance of the multinucleate condition in *Amœba proteus*, CALKINS (57).—Behaviour of the nuclei and chromidial substance during conjugation and also during encystment in *Diffugia urceolata*, ZÜLZER (369).

Nuclear changes during sporoblast-formation in *Gregarina ovata*; curious "maturation"-process, PAEHLER (256).—Nuclear changes and multiplication during sexual reproduction in *Stylorhynchus*; the nuclei are dis-

tinguishable into somatic and germinal (sexual) nuclei, the former of which take no part in gamete-formation; karyokinetic division, LÉGER (188).—Nuclear multiplication in sporulating cysts of *Urospora*, BRASIL (41).

Nuclear multiplication and behaviour of the chromatin in *Thelohania maenadis*, PEREZ (263).

Nuclear behaviour during the various phases of the life-history of *Herpetomonas musce-domestice*, PROWAZEK (277).—Nuclear differentiation, reduction, and fission in *Trichomastix* and *Bodo*, PROWAZEK (278).

Nuclear complexity and differentiation in *Trypanosoma noctue* and *Spirochæta ziemanni*; the so-called "blepharoplast" is more than a centrosome—a kinetic nucleus of equal functional importance with the larger or trophic nucleus, SCHAUDINN (301).

Nuclear changes during conjugation in *Opalina intestinalis*; comparison in this respect with other ciliates, COHN (77).—Nuclear multiplication in *O. saturnalis*, LÉGER & DUBOSCQ (194).—Nuclear maturation or purification during division in *Opercularia stenostoma* associated with "recuperation," FAURÉ (103).

E. DEVELOPMENT; LIFE-CYCLE.

Encystment, and formation of little flagellate embryos, in *Chlamydomyxa montana*, PENARD (260).

Encystment in *Diffugia urceolata* follows after conjugation; it is not merely protective or for resting-purposes, but plays an important part in further development, ZÜLZER (369).

Development and growth of various intestinal Gregarines of Tracheates; different types of development, LÉGER & DUBOSCQ (192).—Comprehensive comparative account of the growth and development of Gregarines from the sporozoite-stage, LÜHE (209).

Cysts and spores of *Diplocystis clerci* n. sp., LÉGER (189).—Development and growth of the young individuals in *Gregarina ovata* from sporozoites, PAEHLER (256).—Spores and sporozoites of *Urospora lagidis*, BRASIL (41).

Development of oocysts and spores in *Adelea transita*, LÉGER (189).—Oocysts, spores, and sporozoites of *Angeiocystis* n. g., BRASIL (40).

Ookinetes of *Hemogregarina bagensis* observed in *Placobdella catenigera* with two nuclear bodies, one much resembling the "centrosome" of a Trypanosome, BRUMPT (48).

Development of the different forms of *Trypanosoma noctue* and *Spirochæta ziemanni* from different types of ookinete; complex life-history, a true Hæmosporidian (*Halteridium*) phase alternating with the Trypanosome phase, SCHAUDINN (301).

Further evolution of *Trypanosoma barbatulae* in *Piscicola*, along the lines revealed by Schaudinn, and, similarly, of *Trypanoplasma varium* in *Hemiclepsis*, described by LÉGER (184 & 185).

Evidence pointing to ontogenetic relationship between *T. inopinatum* and a *Drepanidium* of the green frog, which probably both represent phases in one complete life-cycle; forms transitional between "sporozoites" [probably merozoites] and *Spirochæta*-like Trypanosomes, BILLET (26).—Important experiments tending to prove that the *Trypanosoma*, in a leech, gives rise to the *Drepanidium*, in the frog, id. (20).

Development of a flagellate (Trypanosome) phase in the splenic parasites of Kala-azar (*Piroplasma donovani*), ROGERS (286).

Notes on pansporoblasts and spores of various *Microsporidia*, LUTZ & SPLENDORE (213).—Development and growth of the cyst, "sporonts" [pansporoblasts] and spores in *Glugea anomala*, STEMPFEL (336).—Cysts and spores of *G. stephani*, WOODCOCK (361).—Sporonts and development of spores in *Thelohania legeri*, HESSE (141).

Formation and development of the cyst, spores, and sporozoites in

Sphæractinomyxon n. g., CAULLERY & MESNIL (64); in *Triactinomyxon* LÉGER (182).

Detailed account of the complicated life-history of *Cytoryctes variolæ*, CALKINS (58).

Cyst-formation, development, and life-history of *Herpetomonas muscæ-domesticæ*, PROWAZEK (277).—Life-cycle of *Trichomastix* and *Bodo lacertæ* (particularly complex in this form) described, id. (278).

Varieties of encystment in the *Opalina*, LÉGER & DUBOSCQ (193 & 195).

F. GROUP RELATIONSHIPS; CLASSIFICATORY CHANGES.

Chlamydomyxa is to be placed in the Mycetozoa, being probably allied to the *Mycetozoidæ* (*Euplasmoidæ*), PENARD (260).

POPOFSKY (270) considerably amplifies the classification of the *Acanthometrea*, introducing especially several new families and sub-genera.

Relationship of the Actinomyxidia to the Myxosporidia, CAULLERY & MESNIL (65) & LÉGER (183).

CALKINS (58) creates the family *Cytoryctidæ* for *Cytoryctes*, *Caryoryctes* n. g., and *Lymphosporidium*, which he places in the sub-order *Microsporidia*, though with reservations. [The Recorder fails to see much resemblance between these forms and a typical Microsporidian. Considering, for one thing, the very different character of the nucleus (of the "distributed" type in his family), it seems much better to leave these forms in the Serosporidia, where, indeed, *Lymphosporidium* has been hitherto placed.]

On the affinities of *Trypanoplasma* and *Trypanosoma* and the derivation of the latter, LÉGER (181).

Affinities of Trypanosomes with the flagellum morphologically anterior (type *T. noctuæ*, after Schaudinn) with Herpetomonads, LÉGER (187).

The *Astomata* so-called do not represent a natural group; the *Opalina* are very different from the other members and should be placed in a distinct family, LÉGER & DUBOSCQ (193).

Basing his views on a comparative study of the fixative apparatus of *Vorticellidæ*, FAURÉ (100) derives the Discotricha (or Peritricha) directly from the Holotricha, through forms like *Scyphidia* and *Hemispeira*, which are to be regarded as primitive. This has more in its favour than a Hypotrichous origin through the *Urceolaridæ*.

G. MISCELLANEA.

1. Cultivation and infection.

Artificial cultivation of the Amœba of tropical dysentery, LESAGE (202).

On the artificial cultivation of Trypanosomes, ANON. (4); on the artificial cultivation of *Trypanosoma brucei*, NOVY & McNEAL (251).

Culture media for Infusoria, STATKEWITSCH (332).

Piroplasma hominis is conveyed by a tick, *Dermacentor reticulatus*, WILSON & CHOWNING (360).

Transmission of *Trypanosoma noctuæ* and *Spirochæta ziemanni* by the gnat *Culex*, which is a true alternate host; hereditary infection of the same, SCHAUDINN (301).

After his investigations on leeches as the alternate hosts of piscine Trypanosomes and Hæmogregarines, BRUMPT (49) is fully convinced that the *Glossinæ* are true alternate hosts of mammalian Trypanosomes.

White rats found naturally infected with *T. lewisi*; infection undoubtedly conveyed by fleas or lice, LAVERAN & MESNIL (175).

Probably a mosquito transmits *Trypanosoma equinum* from the native host (*Hydrochærus*) to domestic animals, at the hour of drinking, ELMASSIAN & MIGONE (92).

In *Hemiclepsis marginata* infected with Trypanosomes, the ova and embryos are not parasitized. Hence BRUMPT (48) concludes that hereditary infection does not occur in this case.

Hereditary (ovarian) infection of the common house-fly with *Herpetomonas muscae-domesticae*, PROWAZEK (277).

2. Technique.

Description of Steenstrup's apparatus for collecting plankton, OSTENFELD & PAULSEN (255).

On a method of obtaining *Amæbæ* for the laboratory, WEYSSE (358).

On the preparation of Foraminifera, MARPMANN (226).—On a method of taking internal casts of Foraminifera, QUILTER (280).

Effect of media of different consistency in hindering and limiting the movement of Infusoria, STATKEWITSCH (332).

On a method of fixing Infusoria (*Vorticella*, *Carchesium*) nicely expanded, DE BEAUCHAMP (15).

A method of demonstrating the external discharge of the contractile vacuole in *Paramœcium* and other Infusorians, JENNINGS (151).

On the "neutrophile" staining character of Protozoan nuclei, MARINO (224).

Laveran's Borrel-blue method used as a stain for dysenteric *Amæbæ*, VERDUN (349).—Simplification and improvement of his methylene-blue-eosin stain for Hæmatozoa, GIEMSA (117).—On a modification of Romanowsky's stain which will stain Trypanosomes, etc., in sections, LEISHMAN (197).

3. Bibliography, etc.

Protozoan bibliography for 1903, with abstracts of several papers, MAYER (232).

List of Protozoan literature for 1904 (1st part), SCHAUDINN (302).

Protozoan bibliography for 1901, ANON. (1).

Useful bibliography of the Gregarines, LÜHE (209).

Changes in nomenclature for the different types of Protozoan reproduction suggested, HARTMANN (135).

ROSS & BOYCE (290) maintain that Forde and Dutton first discovered the human Trypanosome.

III. DISTRIBUTION.

A. GEOGRAPHICAL.

Distribution (geographical and bathymetrical) of the *Tripylaria* found by the German Deep-Sea Expedition ("Valdivia"), HÄCKER (132).

Europe:—England (Cheshire and Essex), new *Rhizopods*, CASH (60).

Plymouth Sound and neighbourhood, list of Foraminifera occurring in, WORTH (366).

Lough Larne district, Foraminifera from, including *Bulima elongata* new to British seas, GOUGH (124).

Coast of Antrim, off Rathlin Island, an unusually large specimen of *Astrorhiza*, WELCH (355).

Belgian coast, Foraminifera, GILSON (118).

Ambleteuse (Pas-de-Calais), from diatomaceous sand, *Ocyglossa velox*, a new Flagellate, GIARD (116).

Lagos, and Southern Portugal, marine Foraminifera from, NOBRE (250).

Lake of Geneva and neighbourhood, new *Rhizopods*, PENARD (259); Heliozoa, id. (262).

Various Italian Alpine lakelets, Protozoa from, MONTI (242).

Coast around Delos (Grecian Archipelago), Foraminifera, SIDEBOTTOM (317).

Asia:—Malay Archipelago, Foraminifera, MILLETT (236 & 237).

Seas around Japan, list of *Ceratia* from, OKAMURA & NISHIKAWA (253).

Australasia:—Australia, Foraminifera from, JENSEN (153).

New Zealand, complete list of Protozoan fauna of, HUTTON (147).

America:—Gulf of Mexico, Biological Station, Protozoan fauna from neighbourhood of, SMITH (325).

B. GEOLOGICAL.

Quaternary:—Post-glacial beds, Altcar, Lancs., Foraminifera, READE (282).

Glacial sands, Malone (Belfast), Foraminifera from, GOUGH (125).

Tertiary:—Miocene, Italy, distribution of *Textularidæ* in, FORNASINI (112).

Miocene, Piedmont, new Foraminifera, SILVESTRI (321).

Miocene, Maryland, Foraminifera, BAGG (9); Radiolaria, MARTIN (228).

Miocene (?), Andalusia (Guadalquivir), Foraminifera (*Lepidocyclina* and *Discospirina*), DOUVILLÉ (84).

Tertiary (Miocene?) Wels, Austria, Foraminifera, SCHUBERT (309).

Upper Eocene and Oligocene, Brown's Creek, Victoria, Foraminifera, CHAPMAN (71).

Eocene, Maritime Alps and Pyrenees, *Orbitoidæ*, many n. spp., SCHLUMBERGER (305).

Eocene, S. Genesio (Turin), Foraminifera, LEARDI (177 & 178).

Eocene, Mt. Judica and district of Catenanuova (Catania), Foraminifera, CHECCHIA-RISPOLI (72).

Middle Eocene, Dardanelles, *Nummulites* from, HOLLAND (145).

Eocene (*Nummulites*-chalk), Austria, various *Nummulitidæ* and *Orbitoidæ*, PREVER & RZEHAK (276).

Eocene ("Flysch"), Montenegro, Foraminifera, mostly *Nummulitidæ*, MARTELLI (227).

Tertiary, table of comparative distribution of the chief forms of *Nummulites* sens. lat. in, PREVER (275).

Tertiary, Valley of the Guadalquivir, *Nummulitidæ*, CALDERON (55).

Early Tertiary limestones, Batjan and Obi (Malay Archipelago), occurrence of Foraminifera, MARTIN (229).

Tertiary, Saratow (region of Volga), *Nodosaria raphanistrum*, ARKHANGELSKII (5).

Secondary:—Cretaceous to Miocene, Galicia, Foraminifera, listed, FRIEDBERG (114).

Upper Cretaceous, England, Foraminifera, JUKES-BROWNE (154).

Cretaceous, Eastern Bohemia, Foraminifera, JAHN (149).

Cretaceous, Bisbee, Arizona, *Orbitolina texana*, STANTON (331).

Cretaceous, Pondoland, South Africa, Foraminifera, CHAPMAN (69).

Lower Cretaceous, Spain, new *Orbitoides* and *Orthophragminæ*, PREVER (272).

Jurassic (lower Oolite), W. Australia, Foraminifera, CHAPMAN (70).

Jurassic, Memel (Königsberg), Foraminifera, BRÜCKMANN (46).

Primary:—Coal measures, Mississippi Valley, *Triticites*, a new Foraminiferan, GIRTY (120).

Coal-measures, in the pollen chambers of *Stephanospermum*, Infusoria allied to *Cinetoconia*, RENAULT (284).

Carboniferous limestone, Bisbee, Arizona, *Fusulina cylindrica*, GIRTY (121).

Carboniferous, Colorado, *Fusulina cylindrica*, GIRTY (122).

Permo-Carboniferous, Kansas, Foraminifera, SPANDEL (329).

C. PARASITIC (including commensalism).

Algae:—In the cells of *Valonia* (one of the Siphonæ), *Nassula* sp., KÜSTER (162).

Protozoa:—In *Amœba viridis*, nucleus, a Fungus, GRUBER (128).

In *Paramœcium caudatum*, meganucleus, *Caryoryctes cytorictoides* n. g., n. sp., CALKINS (58).

Echinodermata:—In *Cucumaria pentactes* and *C. planci*, respiratory trees and celome, *Cystobia minchinii* n. sp., WOODCOCK (364).

In *Sphærechinus granularis* and *Strongylocentrotus lividus*, intestine, *Anophrys echini* n. sp., DI MAURO (231).

Chaetopoda:—In *Audouinia tentaculata*, "cardiac body," *Angeiocystis audouinii* n. g., n. sp., BRASIL (40); in *A. t.*, intestine, *Anoplophrya brasili* n. sp., LÉGER & DUBOSCQ (193).

In marine *Tubificidæ* (*Clitellio arenarius* and *Hemitubifex benedii*), intestine, *Spheractinomyzon stolci* n. g., n. sp., CAULLERY & MESNIL (64).

In *Tubifex tubifex*, chloragogenous cells, a Sporozoan unidentified (either a Coccidian or a Gregarine), LÉGER (183).

Hirudinea:—In digestive tube of various Hirudinea parasitic on fishes (*Placobdella soleæ*, *P. scorpii*, *Branchellion torpedinis*, *Trachelobdella lubrica*), bodies very like ookinetes of *Hæmogregarines*, BRUMPT (48).

Ectoparasitic on *Clepsine bioculata*, *Opercularia clepsinis* n. sp., POW (271).

In *Helobdella algira*, digestive tube, *T. inopinatum*, BILLET (20).

In *Hemiclepsis marginata*, digestive tube, *Trypanoplasma varium* n. sp., LÉGER (185); in *H. m.* (ectoparasitic on fish), digestive tube, small, active Trypanosomes, BRUMPT (48).

In *Placobdella catenigera*, digestive tube, *Hæmogregarina bagensis*, BRUMPT (48).

In *Piscicola* sp., digestive tube, *Trypanosoma barbatulæ* n. sp., LÉGER (184).

Crustacea:—In *Carcinus mœnas*, musculature, *Thelohania mœnadis* n. sp., PEREZ (263).

Myriapoda:—In *Chordeuma sylvestre*, intestine, *Stenophora chordeumæ* n. sp., LÉGER & DUBOSCQ (192).

In *Craspedosoma rawlinii* simile, intestine, *Stenophora aculeata* n. sp., LÉGER & DUBOSCQ (192).

In intestine of *Julus albipes*, *J. londinensis*, *Schizophyllum mediterraneum* and *S. sabulosum*, *Stenophora juli*, LÉGER & DUBOSCQ (192).

In *Lysioptalum fatidissimum*, intestine, *Stenophora silene* n. sp., LÉGER & DUBOSCQ (192).

In *Pachyjulius varius*, intestine, *Stenophora producta* n. sp., LÉGER & DUBOSCQ (192).

Insecta:—In the following Lepidoptera, new *Glugeidæ*, viz.: *Halesidotis* sp.,—*Glugea halesidotis*, *Cæculia* sp.,—*G. cæculia*, *Hydria* sp.,—*G. hydrie*, *Heliotis armigera*—*G. heliotidis*, *Micrattacus nana*—*G. micrattaci*, LUTZ & SPLENDRE (213).

In *Anopheles maculipennis* (larvæ), fat bodies only, *Thelohania legeri* n. sp., HESSE (140).

In *Embia solieri*, intestine, *Gregarina marteli* n. sp., body cavity, *Diplocystis clerici* n. sp., and *Adelea transita* n. sp., LÉGER (190 & 189).

In *Olocrates gibbus*, intestine, *Stylorhynchus oblongatus*, LÉGER (188).

In *Periplaneta orientalis*, cœlome, *Diplocystis schneideri*, WOODCOCK (364).

In *Sarcophaga hæmorrhoidalis*, digestive tube, *Herpetomonas sarcophagæ* n. sp., PROWAZEK (277).

In *Scaurus tristis*, intestine, *Stylorhynchus longicollis*, LÉGER (188).

In *Tabanus glaucopis* (probably also in *Hæmatopota italica*), digestive tube, *Herpetomonas subulata* n. sp., LÉGER (186).

Pisces:—In blood of marine Teleosteans, new Hæmatozoa, as follows: *Platessa vulgaris*—*Trypanosoma platessæ* and *Hæmogregarina p.*, *Flesus vulgaris*—*T. flesi* and *H. f.*, *Platophrys laterna*—*T. laternæ* and *H. l.*, LEBAILLY (179); also in *Blennius pholis*—*T. delagei*, *Callionymus dracuncululus*—*T. callionymæ*, *H. c.* and *H. quadrigemina*, *Cottus bubalis*—*T. cotti* and *H. c.*, *Gobius niger*—*T. gobii*, *H. g.* and *H. blanchardi*, *Limanda platesoides*—*T. limandæ*, BRUMPT & LEBAILLY (50).

In *Box boops*, rectum, *Opalina saturnalis* n. sp., LÉGER & DUBOSQ (193).

In blood of: bream, *Trypanosoma abramis* n. sp.; carp, *T. danilewskyi* n. sp.; *Tinca tinca*, *T. tinçæ* n. sp., LAVERAN & MESNIL (176).

In carp, blood, *Trypanosoma danilewskyi*, LAVERAN (172).

In *Cobitis barbatula*, blood, *Trypanosoma barbatulæ* n. sp., and *Trypanoplasma varium* n. sp., LÉGER (184 & 185).

In *Phoxinus lævis* (minnow), blood, *Trypanoplasma borreli*, LÉGER (180)

In plaice and flounders, lymph channels (dermal and mesenteric) *Lymphocystis johnstonei* n. g., n. sp., WOODCOCK (362).

In *Pleuronectes platessa*, gut-wall, *Glugea stephani*; otic capsule, *Sphærospora platessæ* n. sp., WOODCOCK (361).

In *Pseudopleuronectes americanus* (winter-flounder), gut-wall, *Glugea stephani*, WOODCOCK (361).

In *Rhombus triacanthus* (butter-fish), liver, *Pleistophora* sp., WOODCOCK (361).

In rainbow-trout, skeletal and connective tissue, principally of the head region (auditory organ), but not the brain itself, *Lentospora* (nom. nov.) *cerebralis*, PLEHN (269).

Amphibia:—In *Rana esculenta*, blood, *Trypanosoma inopinatum* n. sp., SERGENT (313).

In the blood of a frog (undetermined), *Trypanosoma nelspruitense* n. sp., LAVERAN (171).

Reptilia:—In *Bufo mauritanicus*, blood, *Hæmogregarina tunisiensis* n. sp., NICOLLE (247).

In *Emys leprosa*, blood, *Hæmogregarina bagensis* n. sp., DUCLOUX (88).

In *Gongylus ocellatus*, blood, *H. sergentium* n. sp., NICOLLE (248).

In *Hemidactylus leschenaultii* (a gecko), blood, *Hæmocystidium simondi* n. g., n. sp., CASTELLANI & WILLEY (63).

In *Lacerta muralis*, cloaca and rectum, *Trichomonas lacertæ* n. sp., PROWAZEK (278); in *L. ocellata*, blood, *Hæmogregarina curvirostris* n. sp., BILLET (24), and *H. biretorta* n. sp., NICOLLE (249).

In *Nicoria trijuga* (a tortoise), blood, *Hæmogregarina nicoriæ* n. sp., CASTELLANI & WILLEY (63).

In *Psammodromus algirus*, blood, *H. psammodromi* n. sp., SOULIÉ (327).

In *Testudo mauritanica*, blood, *H. mauritanica* n. sp., SERGENT (314).

In *Tropidonotus piscator*, blood, *H. mirabilis* n. sp., CASTELLANI & WILLEY (63).

In *Tropidonotus viperinus*, blood, *H. viperini* n. sp., BILLET (22).

Aves:—Occurrence of "*Hæmamæbæ*" and Trypanosomes in the blood of various Algerian birds, and their relative abundance, SERGENT (315).

In *Padda oryzivora*, blood, *Trypanosoma paddæ* n. sp., LAVERAN & MESNIL (176).

In *Scops bakkamæna* (an owl), blood, *Halteridium danilewskyi*, CASTELLANI & WILLEY (63).

Mammalia:—In *Mus musculus*, intestine, *Dicercomonas muris* and *D. intestinalis*, FOA (109).

In white rats, blood, *Trypanosoma lewisi*, LAVERAN & MESNIL (175).

In the rat, intestine, *Octomitus intestinalis* n. sp., PROWAZEK (278).

In a rabbit, blood, a Trypanosome, PETRIE (266).

In man, blood (free and endoglobular), *Piroplasma hominis* n. sp., WILSON & CHOWNING (360); (probably *Spermophilus columbianus*, in whose blood the parasites also occur, is the "natural" vertebrate host).

In buccal cavity of man, in relation with the teeth (caries, cement), *Entamæba buccalis* n. sp., PROWAZEK (279).

IV. SYSTEMATIC.

[Note. Only new forms, forms whose occurrence is of special interest, and forms described and figured are mentioned specifically.]

A. PROTOZOA IN GENERAL.

[For lists of Protozoa from various localities, see under Plankton (II. c. 1) and Distribution (III. A.).]

Protozoa, their rôle in purifying rivers, WEIGELT (354) pp. 507–514, with figg. 57–77 illustrative of different forms.

B. GYMNOMYXA.

1. MYCETOZOA.

(a) Protomyxidea:—

Biomyxa vagans, note on occurrence, SMITH (325) p. 48.

Vampyrella flabellata n. sp., occurrence and description, CASH (60) p. 224, pl. xxvi, figg. 5 & 6.

(b) Mycetozoidea:—

Allied to Mycetozoidea.

Chlamydomyxa montana, general account of, PENARD (260) pp. 296–334, 19 text-figg.

2. RHIZOPODA.

(a) Lobosa:—

Amœba coli, of so-called tropical dysentery, specific characters described, VERDUN (350) pp. 184 & 185; *A. dumetosa* n. sp., p. 392, 6 text-figg., *A. pulverulenta* n. sp., p. 395, 4 text-figg., occurrence and diagnoses, PENARD (259); *A. pilosa* n. sp., occurrence and description, CASH (60) p. 219, pl. xxvi, fig. 8; *A. proteus*, evidences of a sexual cycle in the life-history of, CALKINS (57) pp. 1–16, 3 pls., 1 text-fig.; *A. p.*, division, especially of the nucleus, described, AVERINTZEV (7) pp. 399 & 400; *A. terricola*, discharge of the contractile vacuole in, described, PENARD (261) pp. 659–662, 2 text-figg.; *A. viridis*, notes on, and nuclear infection of, by a Fungal parasite, GRUBER (128) pp. 67–76, pl. vii.

Cochliopodium ambiguum n. sp., p. 405, 4 text-figg., *C. spumosum* n. sp., p. 401, 5 text-figg., occurrence and diagnoses, PENARD (259).

- Diffugia minutissima* **n. sp.** occurrence and diagnosis, PENARD (259) p. 410, 2 text-figg.; *D. urceolata*, full account of, with special reference to the chromidial substance, conjugation, and the nature of encystment, ZÜLZER (369) pp. 240-295, pls. x-xii, 2 text-figg.
- Diffugiella* **n. g.** diagnosed, p. 224, *D. apiculata* **n. sp.**, occurrence and description, CASH (60) p. 225, pl. xxvi, fig. 7.
- Entamæba buccalis* **n. sp.**, from buccal cavity of man, described, PROWAZEK (279) pp. 42-44; *E. histolytica* (of tropical dysentery) shewn by its development to be quite distinct from *E. coli*, LESAGE (202) pp. 1237-1239.
- Gringa filiformis*, note on, SMITH (325) p. 47.
- Pelomyxa fragilis* **n. sp.**, occurrence and diagnosis, PENARD (259) p. 397, 4 text-figg.
- Penardia* **n. g.** diagnosed, p. 223, *P. mutabilis* **n. sp.**, occurrence and description, CASH (60) p. 223, pl. xxvi, figg. 1 & 2.
- Pseudochlamys arcelloides* **n. sp.**, occurrence and diagnosis, PENARD (259) p. 408, 4 text-figg.
- Pseudodiffugia virescens* **n. sp.**, occurrence and diagnosis, PENARD (259) p. 421, 2 text-figg.

(b) Foraminifera:—

Foraminifera, structural characters of the shell of floating forms; their adaptation to this mode of life, KEMNA (155) pp. cix-cxxvii.

Foraminifera from:—Belgian coast, GILSON (118) p. 33; Lough Larne district, with mention of less common forms, GOUGH (124); Australia, listed, JENSEN (153); Malay Archipelago, occurrence and notes on, MILLETT (236 & 237); Lagos and Southern Portugal, NOBRE (250), p. 153; coast of the Island of Delos (Grecian Archipelago), SIDEBOTTOM (317); Plymouth Sound and neighbourhood, listed, WORTH (366) pp. 174-185.

†Foraminifera, mostly lists, from:—Tertiary, Valley of the Guadalquivir (*Nummulitidae*), CALDERON (55); Eocene, Mount Judica and district of Catenanuova (Catania), described, CHECCHIA-RISPOLI (72); Miocene (?), Andalusia, occurrence (*Lepidocyclina* and *Discospirina*), DOUVILLÉ (84); Cretaceous to Miocene, Galicia, FRIEDBERG (114); Glacial sands, Malone (Belfast), GOUGH (125) p. 258; Cretaceous, Eastern Bohemia, JAHN (149) p. 89; Upper Chalk, England, including several unnamed **n. spp.**, JUKES-BROWNE (154) pp. 303-5, 308, 316, 318, 323, 324, 328-337, 340, 343, 347-353, 366, 371-375 & 510-519; Eocene, near Turin, notes on, LEARDI (177); Eocene ("Flysch"), Montenegro, mostly *Nummulitidae*, MARTELLI (227); early Tertiary limestones, Batjan and Obi (Malay peninsula), occurrence, MARTIN (229); Eocene, Austria, *Nummulitidae* and *Orbitoideæ*, PREVER & RZEHAŁ (276); Post-glacial beds, Altcar, Lancs., READE (282) pp. 361-368; Tertiary (Miocene?), Wels, Austria, notes on, SCHUBERT (309).

†*Ammodiscus concavus* **n. sp.**, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329), p. 179, fig. 1; *A. incertus* var. *macilenta* **n. var.**, occurrence and diagnosis, CHAPMAN (71) p. 228, pl. xxii, fig. 5; *A. nidiformis* **n. sp.**, Jurassic, Memel, described, BRÜCKMANN (46) p. 29, pl. iii, figg. 22 & 23.

†*Anomalina grosserugosa*, Miocene, Maryland, described, BAGG (9) p. 466, pl. cxxxi, fig. 11.

Articulina lineata, p. 17, pl. v, fig. 1, *A. sagra*, p. 17, pl. iv, figg. 18-20, text-fig. 6, *A. sulcata*, p. 16, pl. iv, figg. 16 & 17, text-fig. 5, notes on, SIDEBOTTOM (317).

†*Assilina depressa*, p. 397, pl. xiv, fig. 9, *A. discoidalis* varr., p. 396, pl. xiv, fig. 8, *A. nitida*, p. 397, pl. xiv, fig. 11, *A. radiolata*, p. 397, pl. xiv, fig. 12, *A. undata*, p. 397, pl. xiv, fig. 10, forms originally described by

D'Orbigny in the "Prodrome," notes on, FORNASINI (111), figures taken from the "Planches inédites"; *A. leymeriei*, p. 194, pl. i, figg. 9-17, *A. placentula*, p. 193, pl. i, figg. 1-8, Eocene, Austria, described, PREVER & RZEHAŁ (276); *A. spira* (A-form), occurrence and note on, CHECCHIA-RISPOLI (72) p. 53, pl. ii, fig. 3.

Astrorhiza sp., occurrence of an unusually large specimen off Rathlin Island (Antrim), WELCH (355) p. 27.

†*Baculogypsina*, remarks on the genus, p. 117, *B. sphaerulata*, fig. 14, *B. sp.*, figg. 12 & 13, occurrence, PREVER (274); *B. sphaerulata* (Pkr. & J.), Eocene, S. Genesio, described, LEARDI (178), p. 185, pl. v, figg. 6-14.

†*Bathysiphon filiformis*, p. 412, pl. xix, fig. 13, *B. taurinensis*, p. 412, pl. xix, figg. 10-12, Tertiary, Wels, Austria, notes on, SCHUBERT (309).

†*Bigenerina agglutinans*, Jurassic, Memel, described, BRÜCKMANN (46) p. 29, pl. iv, fig. 25; *B. eximia*, Permian-Carboniferous, Kansas, note on, SPANDEL (329) p. 181, fig. 2; *B. robusta*, Tertiary, Austria, note on, SCHUBERT (309) p. 415, pl. xix, fig. 9.

Biloculina elongata d'Orb., note on, SIDEBOTTOM (317) p. 3, pl. ii, fig. 8; *B. sphaera*, in plankton, Capri, Lo BIANCO (205) p. 62, pl. xli, fig. 179.

†*Bolivina beyrichii* var. *alata*, Miocene, Maryland, described, BAGG (9) p. 473, pl. cxxxii, fig. 14.

†*Brugueria* (*Camerina*) *laevigata*, Eocene, Austria, note on, PREVER & RZEHAŁ (276) p. 197, pl. ii, fig. 35; *B. libyca* n. sp., diagnosis and synonymy, PREVER (273) p. 32.

Bulima elongata, occurrence in British seas (Lough Larne), GOUGH (124) p. 37.

†*Bulimina affinis* var. *tenuissimestriata* n. var., p. 416, pl. xix, fig. 5, *B. elegans*, var. *gibba* n. var., p. 416, pl. xix, fig. 6, *B. rotula* n. sp., p. 416, pl. xix, fig. 7, Tertiary, Austria, diagnosed, SCHUBERT (309); *B. gregorii* n. sp., Oolite, W. Australia, diagnosed, CHAPMAN (70) p. 187, pl. xxii, fig. 3; *B. trigonula* nom. nov., var. *inornata* n. var., Cretaceous, Pondoland, diagnosed, id. (69) p. 224, pl. xxix, fig. 3.

†*Calcarina tetraëdra*, occurrence and remarks on, CHECCHIA-RISPOLI (72) p. 31, pl. ii, fig. 12.

†*Camerina laevigata*, p. 34, *C. italica* (A-form), p. 37, pl. ii, figg. 28 & 29, occurrence and remarks on, CHECCHIA-RISPOLI (72).

Carpenteria proteiformis Goës, note on, MILLETT (236) p. 496, pl. x, figg. 1 & 2.

†*Chapmanina aegyptiensis*, occurrence in Tuscany (Cretaceous) and note on, SILVESTRI (323) pp. 117-119, 3 text-figg.

†*Conulites aegyptiensis* Chapman, Eocene, S. Genesio, described, LEARDI (178) p. 182, pl. v, figg. 1-4.

†*Cristellaria baltica* n. sp., p. 13, pl. ii, fig. 13, *C. bronni*, p. 17, pl. ii, figg. 5-12, *C. cornucopiae*, p. 17, pl. ii, figg. 17-19, *C. flagellum*, p. 14, pl. ii, fig. 14, *C. harpa*, p. 18, pl. ii, figg. 20-22, *C. hauerina*, p. 19, pl. ii, fig. 25, *C. lithuanica* n. sp., p. 15, pl. ii, fig. 15, *C. manubrium*, p. 19, pl. ii, figg. 23 & 24, *C. mitellata* n. sp., p. 22, pl. ii, figg. 26 & 27, *C. rotulata*, p. 14, pl. ii, figg. 1-4, pl. iii, figg. 1-5, *C. virgata* n. sp., p. 16, pl. ii, fig. 16, Jurassic, Memel, described, BRÜCKMANN (46); *C. colligata* n. sp., p. 20, pl. iii, figg. 6 & 7, *C. flexuosa* n. sp., p. 20, pl. iii, fig. 8, *C. italica*, p. 21, pl. iii, figg. 10-12, *C. mamilligera*, p. 16, pl. iii, fig. 17, *C. osnabrugensis*, p. 15, pl. iii, figg. 14-16, *C. reniformis*, p. 21, pl. iii, fig. 13, *C. subangulata*, p. 22, pl. iii, fig. 9, Jurassic, Memel, described, id. (46); *C. costata* var. *compressa* n. var., p. 194, pl. xxii, fig. 14, *C. c.* var. *seminuda* n. var., p. 195, pl. xxii, fig. 15, *C. daintreei* n. sp., p. 194, pl. xxii, fig. 13, *C. decipiens*, p. 193, pl. xxii, fig. 12, *C. limata*, p. 195, pl. xxii, fig. 16, *C. prominula*, p. 193, pl. xxii, fig. 11, *C. rotulata*, p. 192, pl. xxii, fig. 9, *C. subalata*, p. 193, pl. xxii, fig. 10,

- Oolite, W. Australia, remarks on, CHAPMAN (70); *C. cultrata*, p. 474, pl. cxxxii, fig. 15, *C. vetherellii* p. 475, pl. cxxxii, fig. 16, Miocene, Maryland, described, BAGG (9); *C. josephina* var. *umbonata* n. var., Tertiary, Austria, diagnosed, SCHUBERT (309) p. 418, pl. xix, fig. 4; *C. subalata*, Cretaceous, note on, CHAPMAN (69) p. 227, pl. xxix, figg. 10; *C. n. sp.*, Eocene, Turin, diagnosed, LEARDI (177) p. 163.
- Cyclammina cancellata*, microspheric form of (recent and fossil), described, SILVESTRI (320) pp. 180-185, 4 text-figg.
- +*C. complanata* n. sp., p. 228, pl. xxii, fig. 7, *C. paupera* n. sp., p. 229, pl. xxii, fig. 6, Oligocene, Victoria, diagnosed, CHAPMAN (71); *C. gracilis*, Tertiary, Austria, notes on, SCHUBERT (309) p. 414, pl. xix, figg. 1-3.
- +*Dentalina bradyi* n. sp., Permo-Carboniferous, KANSAS, diagnosed, SPANDEL (329) p. 190, fig. 9; *D. communis*, p. 29, pl. iii, figg. 30, 32 & 33, *D. pinguiculus*, p. 28, pl. iii, figg. 29 & 31, Jurassic, Memel, BRÜCKMANN (46).
- +*Dicyclina schlumbergeri*, Cretaceous, Berre, note on, SCHLUMBERGER & CHOFFAT (306) p. 362, 2 text-figg.
- +*Discorbina orbicularis*, Miocene, Maryland, described, BAGG (9) p. 463, pl. cxxxi, fig. 5; *D. rosacea*, Oolite, W. Australia, note on, CHAPMAN (70) p. 198, pl. xxii, fig. 23.
- Ellipsulimina sequenzai* n. sp., occurrence and diagnosis, SILVESTRI (321) p. xii, fig. 7.
- Ellipsopleurostomella pleurostomella* n. sp., p. 8, figg. 4 & 5, *E. rostrata* n. sp., p. 7, fig. 3, *E. schlichti* n. sp., p. 5, figg. 1 & 2, occurrence and description, SILVESTRI (321).
- +*Epistomina porcellanea* n. sp., p. 26, pl. iv, figg. 17-19, *E. reticulata*, p. 23, pl. iv, figg. 6-9, *E. spinulifera*, p. 25, pl. iv, figg. 1-5, *E. stelligera*, p. 23, pl. iv, figg. 10 & 11, *E. sp.*, p. 27, pl. iv, figg. 20 & 21, Jurassic, Memel, described, BRÜCKMANN (46).
- +*Flabellina dilatata*, Oolite, W. Australia, remarks on, CHAPMAN (70) p. 196, pl. xxii, fig. 18.
- +*Frondicularia*, diagnosis of the genus, p. 6, *F. borussica* n. sp., p. 11, pl. i, fig. 5, *F. distorta* n. sp., p. 11, pl. i, fig. 23, *F. glandulinoides*, p. 12, pl. i, fig. 27, *F. molleri*, p. 7, pl. i, figg. 1-4, 6-8, *F. nikitini*, p. 9, pl. i, figg. 9-14, *F. schellureni* n. sp., p. 10, pl. i, figg. 15-17, *F. spatulata*, p. 13, pl. i, figg. 18-22, *F. supracallovienensis*, p. 12, pl. i, figg. 24, 26, Jurassic, Memel, described, BRÜCKMANN (46).
- +*Fusulina cylindrica*, occurrence, Carboniferous limestone, Bisbee, Arizona, GIRTY (121) p. 50, pl. xi, fig. 1; *F. c.*, Carboniferous, Colorado, note on, GIRTY (122) p. 317; *F. regularis*, Permo-Carboniferous, diagnosed, SPANDEL (329) p. 192, fig. 10.
- +*Geinitzina postcarbonica* n. sp., Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 189, fig. 8.
- +*Glandulina lahusei*, Jurassic, Memel, described, BRÜCKMANN (46) p. 27, pl. iii, fig. 28.
- Globigerina bulloides*, occurrence, plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 156.
- +*G. bulloides*, p. 468, pl. cxxxii, figg. 1 & 2, *G. cretacea*, p. 469, pl. cxxxii, fig. 3, Miocene, Maryland, described, BAGG (9); *G. canaliculata*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 229, pl. xxix, fig. 12.
- +*Gümbelia* (*Lenticulina*) *nicolisi* n. sp., Eocene, Monte Baldo, diagnosed, PREVER (275) p. 478, figg. 3 & 4, *G. sub-montis fractii* n. sp., p. 33, *G. sub-oosterii* De la Harpe, p. 35, var. *pretiosa* n. var., p. 36, diagnoses and synonymy, PREVER (273).
- +*Haplophragmium latidorsatum*, p. 227, pl. xxii, fig. 1, *H. canariense*, p. 228, pl. xxii, fig. 2, occurrence and note, CHAPMAN (71); *H. meridionale* n. sp., p. 223, pl. xxix, fig. 2, *H. neocomianum*, p. 223, pl. xxix, fig. 1,

- Cretaceous, Pondoland, diagnosed, id. (69) ; *H. n.*, Oolite, W. Australia, note on, id. (70) p. 186, pl. xxii, fig. 1.
- Hauerina compressa* d'Orb., note on, SIDEBOTTOM (317) p. 19, pl. v, figg. 7 & 8, text-fig. 8.
- +*Heterostegina suborbicularis*, notes on forms of, originally described by D'Orbigny in the "Prodrome," FORNASINI (111) p. 396, pl. xiv, figg. 5-7, figures taken from the "Planches inédites."
- Lagena levis*, Australian sands, note on, JENSEN (153) p. 816, pl. xxiii, fig. 2 ; *L. ventricosa* **n. sp.**, occurrence and description, SILVESTRI (321) p. 11, fig. 6.
- +*L. apiculata* var. *tetracarinata* **n. var.**, Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22.
- +*Laharpeia* (*Camerina*) *gassinensis* **n. sp.**, Eocene, Roc di Gassino, diagnosed, PREVER (275) p. 477, figg. 1 & 2.
- +*Lenticulina garganica* (A) p. 38, pl. ii, figg. 7 & 8, var. *samnitica* (A) p. 39, pl. ii, fig. 30, *L. curvispira*, p. 40, pl. ii, fig. 31, *L. kaufmanni*, p. 42, pl. ii, fig. 32, *L. irregularis* (B) p. 44, *L. ramondi* (A) p. 44, *L. beaumonti* (B) p. 45, *L. guettardi*, p. 47, pl. ii, figg. 4-6, *L. contorta* (B) p. 51, pl. ii, fig. 1, *L. budensis*, p. 52, pl. ii, fig. 2, occurrence and remarks on, CHECCHIA-RISPOLI (72).
- +*Lepidocyclus*, description, distribution and relationships of the genus, *L. mantelli*, p. 10, pl. i, fig. 4, pl. ii, fig. 18, pl. iii, figg. 7, 12, *L. rawlini* **n. sp.**, p. 11, pl. i, figg. 3, 6, 9, 13, 16, pl. ii, figg. 3, 10, pl. iii, figg. 4, 14, *L. dilatata*, p. 12, pl. i, fig. 2, pl. ii, figg. 8, 21, pl. iii, figg. 10, 15, *L. elephantina*, p. 13, pl. ii, figg. 13, 19, *L. schlumbergeri* **n. sp.**, p. 14, pl. i, fig. 10, pl. ii, fig. 6, *L. chaperi* **n. sp.**, p. 14, pl. ii, fig. 5, *L. gallieni* **n. sp.**, p. 15, pl. i, fig. 8, pl. ii, fig. 1, *L. joffrei* **n. sp.**, p. 16, pl. ii, fig. 17, pl. iii, fig. 11, *L. marginata*, p. 16, pl. i, fig. 7, pl. ii, figg. 7, 9, 11, 20, pl. iii, figg. 3, 8, 9, 13, *L. morgani* **n. sp.**, p. 17, pl. i, fig. 12, 15, 17, pl. ii, figg. 4, 12, pl. iii, fig. 2, *L. sumatrensis*, p. 18, pl. i, fig. 14, pl. ii, fig. 15, pl. iii, fig. 6, *L. tournoueri* **n. sp.**, p. 19, pl. i, fig. 5, pl. ii, figg. 2, 14, pl. iii, fig. 1, *L. canellei* **n. sp.**, p. 20, pl. i, fig. 1, pl. iii, fig. 5, *L. verbeeki*, p. 20, pl. i, fig. 11, pl. ii, fig. 16, *L. munieri* **n. sp.**, p. 20, pl. ii, fig. 22, diagnoses and occurrence, LEMOINE & DOUVILLÉ (201) ; *L.*, discussion of the genus, p. 119, *L. burdigalensis*, fig. 24, *L. dilatata*, fig. 15, *L. formai* **n. sp.**, diagnosed, p. 127, figg. 20 & 21, *L. mantelli*, figg. 16 & 17, *L. marginata*, fig. 23, *L. saccoi* **n. sp.**, p. 127, fig. 19, *L. vidali*, fig. 1, *L. sp.* figg. 18, 22, 25, occurrence and notes, PREVER (274) ; *L. (?) aspera*, occurrence and note, CHECCHIA-RISPOLI (72) p. 64, pl. ii, figg. 10, 11, 15, 16.
- Lingulina carinata*, Australian sands, note on, JENSEN (153) p. 822, pl. xxiii, fig. 13.
- +*Lituola simplex* **n. sp.**, Oligocene, Victoria, diagnosed, CHAPMAN (71) p. 228, pl. xxii, figg. 3 & 4.
- +*Marginulina compressa*, p. 188, p. xxii, fig. 4, *M. solida*, p. 189, pl. xxii, fig. 17, Oolite, W. Australia, notes on, CHAPMAN (70) ; *M. macilenta*, Jurassic, Memel, described, BRÜCKMANN (46) p. 31, pl. iii, fig. 21.
- Massilina annectens* (d'Orb.), p. 18, pl. v, figg. 2-4, *M. rugosa* **n. sp.**, p. 18, pl. v, figg. 5 & 6, text-fig. 7, notes on, SIDEBOTTOM (317).
- Microgromia elegantula* **n. sp.**, p. 416, 1 text-fig., *M. levipes* **n. sp.**, p. 418, 4 text-figg., occurrence and diagnoses, PENARD (259).
- +*Microgypsina*, remarks on the genus, p. 125, *M. derriexi* **n. sp.**, p. 127, figg. 32 & 33, *M. irregularis*, figg. 26-28, 30, 31, 34, *M. taurinensis* **n. sp.**, p. 127, fig. 29, occurrence and diagnoses, PREVER (274).
- Miliolina bicornis*, p. 14, pl. iv, figg. 13 & 14, *M. contorta*, p. 13, pl. iv, figg. 7-9, *M. gracilis*, p. 14, pl. iv, figg. 10-12, *M. laevigata*, p. 12, pl. iv, figg. 1-3, text-fig. 4, *M. pulchella*, p. 15, pl. iv, fig. 15, *M. pygmæa*, p. 13, pl. iv, figg. 4-6, *M. reticulata*, p. 10, pl. iii, figg. 8-10, *M.*

- seminulum*, p. 10, pl. iii, figg. 13-15, var. *cornuta* **n. var.**, p. 11, pl. iii, figg. 11 & 12, text-fig. 3, *M. subrotunda*, p. 8, pl. iii, figg. 1-7, text-fig. 2 notes on, SIDEBOTTOM (317); *M. excisa*, occurrence and note, MILLETT (237) p. 607, pl. xi, fig. 4.
- +*M. gramen* **n. sp.**, *M. tenuis* **n. sp.**, Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22; *M. seminulum*, Miocene, Maryland, described, BAGG (9) p. 481, pl. cxxxiii, fig. 12.
- +*Monogenerina* **n. g.**, characteristics of the genus, p. 181, *M. atava* **n. sp.**, p. 183, fig. 3, *M. nodosariformis* **n. sp.**, p. 184, fig. 4, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329).
- Nodosaria scalaris*, Australian sands, note on, JENSEN (153) p. 816, pl. xxiii, fig. 1.
- +*N. postcarbonica* **n. sp.**, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 188, fig. 7; *N. prima*, Jurassic, Memel, described, BRÜCKMANN (46) p. 28, pl. iii, fig. 27; *N. prismatica*, p. 225, pl. xxix, fig. 5, *N. zippei*, p. 226, pl. xxix, fig. 6, Cretaceous, Pondoland, notes on, CHAPMAN (69); *N. raphanistrum*, Tertiary, Saratow (near the Volga), note on, ARKHANGHELSKII (5) p. 60, pl. xi, fig. 26.
- Nonionina orbicularis* Brady, note on, MILLETT (237) p. 600, pl. xi, fig. 1.
- +*N. scapha*, Miocene, Maryland, described, BAGG (9) p. 460, pl. cxxxi, figg. 1-3.
- Nubecularia divaricata* Brady, p. 2, pl. ii, figg. 5-7, *N. lucifuga* Defr., p. 2, pl. ii, figg. 1-4, notes on, SIDEBOTTOM (317).
- +*Nummulites* sens. lat. (see Prot. Rec. 1902, p. 66), general considerations of, and its sub-divisions, distribution in space and time, PREVER (275) pp. 461-487, 7 text-figg., 1 table; *N. distans* (A and B forms) p. 293, pl. xxv, figg. 5 & 6, *N. dufrenoyi* (A & B) pp. 292 & 293, pl. xxv, figg. 1-4, Middle Eocene, Dardanelles, described, HOLLAND (145).
- +*Operculina costata*, p. 395, pl. xiv, fig. 1, *O. gaimardi*, p. 396, pl. xiv, fig. 4, *O. madagascariensis*, p. 395, pl. xiv, fig. 3, *O. thounii*, p. 395, pl. xiv, fig. 2, originally described by D'Orbigny in the "Prodrome," notes on, FORNASINI (111), the figures being taken from the "Planches inédites"; *O. granulosa*, p. 32, pl. ii, fig. 13, *O. canalifera* (B-form) p. 33, pl. ii, fig. 14, occurrence and notes on, CHECCHIA-RISPOLI (72).
- +*Orbitoides viduli* **n. sp.**, Lower Cretaceous, Spain, diagnosed, PREVER (272) p. 981, figg. 1-5.
- +*Orbitoidinæ*, discussion of the sub-family and constituent genera, PREVER (274) pp. 111-128, pl. vi.
- +*Orbitolina texana*, occurrence, Cretaceous, Bisbee, Arizona, STANTON (331) p. 70, pl. xvi, fig. 4.
- Orbulina universa*, occurrence, plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 157.
- +*O. universa*, Jurassic, Memel, described, BRÜCKMANN (46) p. 32, pl. iv, fig. 24.
- +*Orthophragmina*, discussion of the genus, p. 122, *O. aspera*, figg. 4 & 5, *O. nummulitica*, fig. 9, *O. radians*, fig. 11, *O. rovasendai* **n. sp.**, p. 127, fig. 8, *O. stellata*, figg. 6, 10, *O. varicostata*, fig. 7, occurrence and notes, PREVER (274); *O. aprutina* **n. sp.**, p. 983, fig. 11, *O. circumvallata* **n. sp.**, p. 987, fig. 8, *O. chelussii* **n. sp.**, p. 984, fig. 10, *O. illyrica* **n. sp.**, p. 984, fig. 12, *O. rugosa* **n. sp.**, p. 987, fig. 6, *O. samnitica* **n. sp.**, p. 985, fig. 9, *O. schlumbergeri* **n. sp.**, p. 986, fig. 7, *O. vinassai* **n. sp.**, p. 985, fig. 13, Cretaceous, Spain, diagnosed, PREVER (272); *O. dispana*, p. 56, pl. ii, figg. 9, 23, *O. tenuicostata*, p. 60, pl. ii, figg. 17 & 18, *O. patellaris*, p. 61, pl. ii, fig. 35, *O. stellata*, p. 62, pl. ii, figg. 19-21, *O. stella*, p. 63, pl. ii, fig. 22, occurrence and remarks on, CHECCHIA-RISPOLI (72); *O. patellaris*, p. 120, pl. iii, fig. 6, pl. iv, figg. 13 & 14, *O. gümbeli* **n. sp.**, p. 122, text-fig. 2, *O. radians*, p. 122, pl. iii,

- fig. 7, 9, pl. iv, figg. 15-17, *O. decorata* n. sp., p. 124, pl. iii, fig. 11, *O. munieri*, p. 125, pl. iii, fig. 12, *O. multiplicata*, p. 125, pl. iii, fig. 10, pl. iv, figg. 18, 20, *O. stellata*, p. 126, pl. v, figg. 31-36, pl. vi, figg. 37-40, *O. lanceolata* n. sp., p. 128, pl. 5, figg. 25-30, *O. taramellii*, p. 131, pl. vi, figg. 41-46, 51, 57, *O. bayani*, p. 131, pl. v, fig. 23, pl. iv, figg. 21 & 22, *O. stella*, p. 132, pl. vi, figg. 47-50, 52-56, *O. sp.*, p. 133, pl. iii, fig. 8, Eocene, Pyrenees and Maritime Alps, described, SCHLUMBERGER (305); *O. varians*, Eocene, Austria, note on, PREVER & RZEHAK (276) p. 199, pl. ii, fig. 36.
- Pamphagus bathybioticus* n. sp., occurrence and diagnosis, PENARD (259) p. 413, 6 text-figg.; *P. hyalinus*, peculiar habit of, LORD (208), pp. 76-78, pl. iii, fig. 1.
- +*Paronaea contorta*, p. 192, pl. ii, figg. 28-34, *P. ramondi*, p. 192, pl. i, figg. 18-20, pl. ii, figg. 21 & 22, *P. subramondi*, p. 193, pl. ii, figg. 23-27, Eocene, Austria, described, PREVER & RZEHAK (276); *P. curvispira* (Mngh.), subdivided into four sections, *P. curvispira* sensu stricto (diagnosis and synonymy, p. 31), and *Bruguieria libyca* n. sp., *Gümbelia sub-montis fractii* n. sp., and *G. sub-oosterii* De la H. (qq. v.), PREVER (273).
- Pelosina distoma* n. sp., diagnosed, MILLETT (237) p. 608, pl. xi, figg. 5 & 6. *Planispirina schlumbergeri* n. sp., p. 20, pl. v, figg. 9-11, text-fig. 10, *P. striata* n. sp., p. 21, pl. v, figg. 12-14, text-fig. 9, diagnosed, SIDEBOTTOM (317).
- +*Planorbulina mediterraneensis*, Miocene, Maryland, described, BAGG (9) p. 463, pl. cxxxi, fig. 6.
- +*Pleurostomella subnodosa*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 224, pl. xxix, fig. 4.
- Polymorphina alveoliniformis* n. sp., p. 821, pl. xxiii, figg. 8-12, *P. hedleyi* n. sp., p. 828, pl. xxiii, fig. 14, *P. sororia*, p. 817, pl. xxiii, fig. 3, Australian sands, diagnoses and notes, JENSEN (153).
- +*P. burdigalensis*, p. 196, pl. xxii, fig. 19, *P. compressa*, p. 197, pl. xxii, figg. 21 & 22, *P. gutta*, p. 197, pl. xxii, fig. 20, Oolite, W. Australia, notes on, CHAPMAN (70); *P. compressa*, p. 476, pl. cxxxiii, fig. 1, var. *striata* n. var., p. 476, pl. cxxxiii, fig. 2, *P. elegantissima*, p. 476, pl. cxxxiii, fig. 3, *P. gibba*, p. 477, pl. cxxxiii, fig. 4, *P. lactea*, p. 477, pl. cxxxiii, figg. 5 & 6, *P. regina*, p. 478, pl. cxxxiii, fig. 7, Miocene, Maryland, described, BAGG (9); *P. gibba*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 228, pl. xxix, fig. 11; *P. irregularis* n. sp., Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22; *P. oolithica*, Jurassic, Memel, described, BRÜCKMANN (46) p. 31, pl. iii, figg. 24-26.
- Polystomella crispa* (Linn.) p. 603, pl. xi, fig. 2, *P. verriculata* Brady, p. 604, pl. xi, fig. 3, notes on, MILLETT (237); *P. macella* (perhaps n. sp.), Australian sands, note on, JENSEN (153) p. 817, pl. xxiii, fig. 4.
- +*P. striatopunctata*, Miocene, Maryland, described, BAGG (9) p. 462, pl. cxxxi, fig. 4.
- Pulvinulina brongiartii* (d'Orb.), p. 498, pl. x, fig. 4, *P. oblonga* (Will.) var. *carinata* n. var., p. 498, pl. x, fig. 3, notes on, MILLETT (236).
- +*P. carpenteri*, p. 230, pl. xxix, figg. 14, 18, *P. elegans*, p. 230, pl. xxix, fig. 13, *P. pondensis* n. sp., p. 231, pl. xxix, fig. 19, *P. reticulata*, p. 231, pl. xxix, fig. 15, Cretaceous, Pondoland, notes on, CHAPMAN (69); *P. rjäsanensis*, Jurassic, Memel, described, BRÜCKMANN (46) p. 26, pl. iv, figg. 12-16.
- +*Rhabdogonium pericardium* n. sp., Jurassic, Memel, described, BRÜCKMANN (46) p. 32, pl. iv, fig. 26.
- Rheophax euneta* n. sp., Australian sands, diagnosed, JENSEN (153) p. 821, pl. xxiii, figg. 5-7.
- Rotalia annectens* Park. & J., p. 505, pl. x, fig. 6, var. *concinna* n. var.,

- p. 505, pl. x, fig. 7, *R. schroeteriana* Park. & J., var. *inflata* n. var., p. 504, pl. x, fig. 5, notes on, MILLETT (236).
- +*R. beccarii*, p. 467, pl. cxxxi, figg. 12 & 13, var. *bræckhiana*, p. 467, pl. cxxxi, fig. 14, Miocene, Maryland, described, BAGG (9); *R. soldanii* var. *nitida*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 232, pl. xxix, fig. 17.
- +*Sagrina dimorpha* var. *ornata* n. var., Tertiary, Austria, diagnosed, SCHUBERT (309) p. 419, pl. xix, fig. 8; *S. nodosa*, Pliocene, note on, SILVESTRI (322) pp. 129-132, 2 text-figg.; *S. spinosa* n. sp., Miocene, Maryland, diagnosed, BAGG (9) p. 480, pl. cxxxiii, fig. 11.
- Sigmoilina ovata* n. sp., diagnosed, SIDEBOTTOM (317) p. 6, pl. ii, figg. 12 & 13, text-fig. 1.
- +*Silvestrina* n. g., p. 122, *S. apiculata* (Schlumb.) fig. 3, *S. vandenbröcki* n. sp., p. 127, fig. 2, occurrence and diagnoses, PREVER (274).
- +*Spirocyclina choffati*, history, description, and synonymy of, SCHLUMBERGER & CHOFFAT (306) pp. 358-368, pls. ix & x.
- Spiroloculina impressa* Terq., note on, SIDEBOTTOM (317) p. 5, pl. ii, figg. 9-11.
- +*S. grata*, p. 482, pl. cxxxiii, fig. 14, *S. tenuis*, p. 483, pl. cxxxiii, fig. 13, Miocene, Maryland, described, BAGG (9); *S. sp.*, Jurassic, Memel, note on, BRÜCKMANN (46) p. 30, pl. iv, figg. 22 & 23.
- +*Tetrataxis conica* Ehr. var. *lata* n. var., Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 186, fig. 6.
- +*Textularia abbreviata*, p. 470, pl. cxxxii, fig. 4, *T. agglutinans*, p. 470, pl. cxxxii, fig. 5, *T. articulata*, p. 471, pl. cxxxii, figg. 6 & 7, *T. carinata*, p. 472, pl. cxxxii, fig. 10, *T. gramen*, p. 471, pl. cxxxii, figg. 8 & 9, *T. sagittula*, p. 472, pl. cxxxii, figg. 11 & 12, *T. subangulata*, p. 473, pl. cxxxii, fig. 13, Miocene, Maryland, described, BAGG (9); *T. crater* n. sp., Oolite, W. Australia, diagnosed, CHAPMAN (70) p. 187, pl. xxii, fig. 2; *T. gibbosa*, Permo-Carboniferous, Kansas, note on, SPANDEL (329) p. 185, fig. 5.
- +*Textulariidae*, distribution of, in Miocene of Italy, FORNASINI (112) pp. 89-116.
- Thuramina favosa* Flint, occurrence and note, MILLETT (237) p. 608, pl. xi, fig. 7.
- +*Triticites* n. g., described, for *T. (Miliolites) secalicus*, Carboniferous, Mississippi Valley, Girty (120) pp. 234-240, 5 text-figg.
- +*Trochammina bifaciata* n. sp., *T. mirabilis* n. sp., *T. simplex* n. sp., *T. variegata* n. sp., Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22.
- +*Truncatulina lobatula*, p. 464, pl. cxxxi, figg. 7 & 8, *T. variabilis*, p. 465, pl. cxxxi, figg. 9 & 10, Miocene, Maryland, described, BAGG (9); *T. schloenbachi*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 229, pl. xxix, fig. 16; *T. wuellerstorfi*, Oolite, W. Australia, note on, id. (70) p. 198, pl. xxii, fig. 24.
- +*Uvigerina canariensis*, p. 478, pl. cxxxiii, fig. 8, *U. pygmaea*, p. 479, pl. cxxxiii, fig. 9, *U. tenuistriata*, p. 479, p. cxxxiii, fig. 10, Miocene, Maryland, diagnosed, BAGG (9).
- +*Vaginulina humilis*, p. 226, pl. xxix, fig. 7, *V. intumescens*, p. 227, pl. xxix, fig. 9, *V. legumen*, p. 226, pl. xxix, fig. 8, Cretaceous, Pondoland, notes on, CHAPMAN (69); *V. intumescens*, p. 191, pl. xxii, fig. 8, *V. lata*, p. 190, pl. xxii, fig. 6, *V. schloenbachi*, var. *interrupta* n. var., p. 190, pl. xxii, fig. 5, *V. strigillata*, p. 191, pl. xxii, fig. 7, Oolite, W. Australia, remarks on, id. (70); *V. mosquensis*, p. 30, pl. iii, figg. 18 & 19, *V. sp.*, p. 30, pl. iii, fig. 20, Jurassic, Memel, described, BRÜCKMANN (46).
- Virgulina*, its relation to *Bulimina* and *Bolivina*, p. 23, *V. schreibersiana*, a variety of, described, SILVESTRI (319) p. 22, 7 text-figg.

3. HELIOZOA.

Full account of the Heliozoa and "Pseudo-Heliozoa" of Lake Geneva and neighbourhood, with text-figg. of all species described; classification of genera and species, PENARD (262).

(a) **Aphrothoraca**:—

Actinophrys sol var. *fusca* **n. var.**, Lake of Geneva, diagnosed, PENARD (262) p. 113, 5 figg.

Actinosphaerium arachnoideum **n. sp.**, Lake of Geneva, diagnosed, PENARD (262) p. 137, 1 fig.; *A. eichhorni*, full description of cytological changes in, indicative of physiological degeneration, HERTWIG (138) pp. 307–342, pls. ix–xii; *A. e. varr. majus* **n. var.**, Lake of Geneva, diagnosed, PENARD (262) p. 130, 1 text-fig.

(b) **Chlamydomphora**:—

Astrodisculus laciniatus **n. sp.**, p. 146, 1 fig., *A. zonatus* **n. sp.**, p. 142, 1 fig., Lake Geneva, diagnosed, PENARD (262).

Heterophrys glabrescens **n. sp.**, p. 161, 6 figg., *H. myriopoda* var. *holochlora* **n. var.**, p. 154, 4 figg., Lake Geneva, diagnosed, PENARD (262).

(c) **Chalarothoraca**:—

Acanthocystis pelagica **n. sp.**, occurrence and diagnosis, OSTENFELD (254) p. 4, figg. 4–7; *A. mimetica* **n. sp.**, p. 229, 4 figg., *A. pantopoda* **n. sp.**, p. 255, 1 fig., *A. rubella* **n. sp.**, p. 232, 1 fig., Lake of Geneva, diagnosed, PENARD (262).

Lithocola flavescens **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 220, 1 fig.

Pompholyxophrys ovuligera **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 214, 1 fig.

Raphidiophrys ambigua **n. sp.**, p. 179, 3 figg., *R. caerulea* **n. sp.**, p. 187, 1 fig., *R. intermedia* **n. sp.**, p. 183, 1 fig., *R. symmetrica* **n. sp.**, p. 181, 1 fig., Lake Geneva, diagnosed, PENARD (262); *R. marina* **n. sp.**, occurrence and diagnosis, OSTENFELD (254) p. 4, figg. 1–3.

Raphidocystis **n. g.**, p. 189, *R. glutinosa* **n. sp.**, p. 199, 3 figg., *R. stellata* **n. sp.**, p. 191, 3 figg., *R. tubifera* **n. sp.**, p. 193, 1 fig., Lake Geneva, diagnosed, PENARD (262).

(d) **Desmothoraca**:—

Choanocystis **n. g.**, *lepidula* **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 288, 1 fig.

Hedriocystis reticulata **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 284, 4 figg.

4. RADIOLARIA.

(a) **Peripylaria**:—

†*Acanthosphaera parvula*, Miocene, Maryland, diagnosed, MARTIN (228) p. 458, pl. cxxx, fig. 21.

†*Cannartidium* sp., Miocene, Maryland, note on, MARTIN (228) p. 456, pl. cxxx, fig. 18.

†*Cannartiscus amphicylindricus*, p. 457, pl. cxxx, fig. 19, *C. marylandicus* **n. sp.**, p. 457, pl. cxxx, fig. 20, Miocene, Maryland, diagnosed, MARTIN (228).

†*Cenosphaera porosissima*, Miocene, Maryland, diagnosed, MARTIN (228) p. 459, pl. cxxx, figg. 24 & 25.

Collozoum inerme, plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 158.

- +*Dictyocoryne profunda*, Miocene, Maryland, diagnosed, MARTIN (228) p. 454, pl. cxxx, figg. 11-13.
- +*Hexalonche microsphaera*, Miocene, Maryland, diagnosed, MARTIN (228) p. 458, pl. cxxx, fig. 22.
- +*Hexastylus simplex*, Miocene, Maryland, diagnosed, MARTIN (228), p. 459, pl. cxxx, fig. 23.
- +*Phacodiscus calvertanus* **n. sp.**, Miocene, Maryland, diagnosed, MARTIN (228) p. 456, pl. cxxx, fig. 17.
- +*Porodiscus concentricus*, Miocene, Maryland, diagnosed, MARTIN (228) p. 455, pl. cxxx, fig. 16.
- +*Rhopalodictyum calvertense* **n. sp.**, p. 455, pl. cxxx, fig. 15, *R. marylandicum* **n. sp.**, p. 455, pl. cxxx, fig. 14, Miocene, Maryland, diagnosed, MARTIN (228).
- Sphaerozoum punctatum*, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 159.
- +*Spongasteriscus marylandicus* **n. sp.**, Miocene, Maryland, diagnosed, MARTIN (228) p. 453, pl. cxxx, fig. 10.
- Spongosphæra streptacantha*, in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 165.
- Thalassicolla pelagica*, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 160.

(b) Acantharia:—

- The *Acanthometrea*, classification of the group, many alterations and amplifications suggested, POPOFSKY (270) pp. 28-45; occurrence and description, id. pp. 47-115; nature of skeleton and hydrostatic apparatus in, fully described, illustrated from various genera (*Acanthometra*, *Amphilonche*, *Acanthonia*, etc.), SCHEWIAKOFF (303) 40 pp., 4 pls.
- Acanthapophysia* **n. subg.** (of *Acanthometron*) diagnosed, POPOFSKY (270) p. 64.
- Acanthochiasma cruciata*, p. 52, pl. iv, fig. 2, *A. decacantha* **n. sp.**, p. 53, *A. bicuspidata* **n. sp.**, p. 53, pl. v, fig. 1, *A. plana* **n. sp.**, p. 53, pl. iv, fig. 7, *A. torta* **n. sp.**, p. 54, pl. iv, fig. 6, *A. quadrangula* **n. sp.**, p. 54, pl. iv, fig. 4, *A. kertwigi* **n. sp.**, p. 54, pl. iv, fig. 5, occurrence and diagnoses, POPOFSKY (270).
- Acanthochiasmarium* **n. subg.** (of *Acanthochiasma*) diagnosed, POPOFSKY (270) p. 51.
- Acanthochiasmidium* **n. subg.** (of *A.*) diagnosed, POPOFSKY (270) p. 53.
- Acanthochiasmonium* **n. subg.** (of *A.*) diagnosed, POPOFSKY (270) p. 54.
- Acantholonche* **n. subg.** (of *Amphilonche*) diagnosed, POPOFSKY (270) p. 113.
- Acanthometra* sp., in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 162; [see also under *Acanthrometron*].
- Acanthometridæ* (**sensu nov.**) diagnosed, POPOFSKY (270) p. 59.
- Acanthometron* **n. subg.**, diagnosed, POPOFSKY (270) p. 60.
- Acanthometron* (as genus = *Acanthometra*) p. 60, *A. bifidum*, p. 62, pl. iii, fig. 7, *A. cordiforme* **n. sp.**, p. 62, pl. vi, fig. 2, *A. sphaericum* **n. sp.**, p. 62, pl. vi, fig. 1, *A. piriforme* **n. sp.**, p. 63, pl. v, fig. 5, *A. armatum* **n. sp.**, p. 64, pl. iv, fig. 3, *A. arachnoide* **n. sp.**, p. 64, pl. vi, fig. 4, *A. spinosum* **n. sp.**, p. 66, pl. viii, fig. 5, occurrence and diagnosis, POPOFSKY (270).
- Acanthonia* **n. subg.** diagnosed, POPOFSKY (270) p. 84.
- Acanthonia* (**sensu nov.**) *abcisa* **n. sp.**, p. 86, *A. quadricorna* **n. sp.**, p. 89, pl. vii, fig. 6, occurrence and diagnoses, POPOFSKY (270).
- Acanthonidæ* **n. fam.**, diagnosis, POPOFSKY (270) p. 84.
- Acanthonidium* **n. g.**, p. 91, *A. echinoides*, p. 91, pl. i, fig. 2, *A. claparedei*, p. 91, pl. i, fig. 3, *A. acutum* **n. sp.**, p. 93, pl. vii, fig. 7, *A. astroide* **n. sp.**, p. 99, pl. vii, fig. 8, *A. tetrapterum*, p. 100, pl. vii, fig. 9, occurrence and diagnoses, POPOFSKY (270).

- Acanthoptera* n. g., p. 104, for *A. (Lithoptera) mülleri*, p. 104, *A. (L.) do-decaptera*, p. 104, pl. viii, fig. 4, diagnoses, POPOFSKY (270).
- Acolonche* n. subg. (of *Acanthonia*) diagnosis, POPOFSKY (270) p. 90.
- Actinastridae* n. fam., diagnosed, POPOFSKY (270) p. 57.
- Actinelius minimus* n. sp., diagnosis and occurrence, POPOFSKY (270) p. 49.
- Amphiacantha* n. subg. (of *Acanthonidium*) diagnosis, POPOFSKY (270) p. 100.
- Amphilonche* n. subg. p. 106, diagnosis, POPOFSKY (270).
- Amphilonche* (genus) *belonoides*, p. 107, pl. x, figg. 1 & 2, *A. pertenuis* n. sp., p. 108, pl. viii, fig. 8, pl. x, fig. 10, *A. elongata*, p. 109, pl. x, figg. 3-6, pl. ix, fig. 4, *A. heteracantha*, p. 109, pl. x, figg. 7-9, *A. quadrialata* n. sp., p. 109, pl. x, fig. 13, *A. atlantica* n. sp., p. 110, pl. iii, figg. 1-6, *A. anomala*, p. 110, pl. ix, fig. 7, *A. nodulosa* n. sp., p. 111, pl. vii, figg. 9 & 10, *A. mira* n. sp., p. 111, pl. ix, fig. 8, pl. x, fig. 12, *A. amphihastata* n. sp., p. 112, pl. viii, fig. 7, *A. biformis* n. sp., p. 113, pl. ii, fig. 8, *A. rara* n. sp., p. 113, pl. ix, fig. 6, occurrence and diagnoses, POPOFSKY (270).
- Amphilonchidium ellipsoide* n. sp., p. 114, pl. viii, fig. 11, pl. ix, fig. 5, *A. haeckeli* n. sp., p. 115, pl. ix, fig. 3, *A. nationalis* n. sp., p. 114, pl. x, fig. 11, occurrence and diagnoses, POPOFSKY (270).
- Amphimetron* n. subg. (of *Acanthometron*) diagnosed, POPOFSKY (270) p. 65.
- †*Lithasteriscus radiatus*, Miocene, Maryland, note on, MARTIN (228) p. 453, pl. cxxx, fig. 9.
- Lithoptera* n. subg., diagnosed, POPOFSKY (270) p. 103.
- Lithoptera* (genus) *fenestrata*, p. 103, pl. viii, fig. 3, occurrence and diagnosis, POPOFSKY (270).
- Phyllolonche* n. subg. (of *Phyllostaurus*) diagnosed, POPOFSKY (270) p. 68.
- Quadrinetron* n. subg. (of *Acanthometron*) p. 64, diagnosed, POPOFSKY (270).
- Quadristaurus* n. subg. (of *Acanthonia*) diagnosed, POPOFSKY (270), p. 90.
- Rosetta* n. g., p. 55, *R. elegans* n. sp., p. 56, pl. v, fig. 3, *R. triangularis* n. sp., p. 56, pl. v, fig. 2, occurrence and diagnoses, POPOFSKY (270).
- Rosettidae* n. fam., diagnosed, POPOFSKY (270) p. 55.
- Stellacantha* n. subg. (of *Acanthonidium*) diagnosed, POPOFSKY (270) p. 99.
- Stellolonche* n. subg. (of *Zygacantha*) diagnosed, POPOFSKY (270) p. 75.
- Trizona* n. g., p. 56, *T. brandti* n. sp., p. 56, pl. v, fig. 4, occurrence and diagnoses, POPOFSKY (270).
- Trizonidae* n. fam., diagnosed, POPOFSKY (270) p. 56.
- Zygacantha* n. subg., diagnosed, POPOFSKY (270) p. 71.
- Zygacantha* (genus) *latifolia* n. sp., p. 71, pl. vi, figg. 6 & 7, *Z. concreta* n. sp., p. 72, pl. v, fig. 6, *Z. septentrionalis* n. sp., p. 72, *Z. rotunda* n. sp., p. 75, *Z. elegans* n. sp., p. 75, pl. ix, fig. 2, occurrence and diagnoses, POPOFSKY (270).
- Zygacanthidae* n. fam., diagnosed, POPOFSKY (270) p. 69.
- Zygacanthidium longum* n. sp., p. 76, pl. vii, fig. 3, *Z. hastatum* n. sp., p. 77, pl. vii, fig. 4, *Z. gladiusum* n. sp., p. 77, pl. vii, fig. 1, *Z. atlanticum* n. sp., p. 83, pl. vii, fig. 5, occurrence and diagnoses, POPOFSKY (270).
- Zygapophysia* n. subg. (of *Zygacantha*) diagnosed, POPOFSKY (270) p. 73.
- Zygolonche* n. subg. (of *Amphilonche*) diagnosed, POPOFSKY (270) p. 112.
- Zygonchidium* n. subg. (of *Amphilonchidium*) diagnosed, POPOFSKY (270) p. 114.
- Zygoptera* n. g., p. 104, for *Z. (Lithoptera) quadrata*, p. 104, pl. viii, fig. 5, diagnosed, POPOFSKY (270).

(c) Monopylaria:—

- †*Anthocyrtium doricum*, Miocene, Maryland, diagnosed, MARTIN (228) p. 451, pl. cxxx, fig. 8.
- †*Eucyrtidium calvertense* n. sp., Miocene, Maryland, diagnosed, MARTIN (228) p. 450, pl. cxxx, fig. 5.

†*Lithocampe marylandica* **n. sp.**, Miocene, Maryland, diagnosed, MARTIN (228) p. 450, pl. cxxx, fig. 4.

†*Stichocapsa macropora*, Miocene, Maryland, diagnosed, MARTIN (228) p. 451, pl. cxxx, figg. 6 & 7.

(d) **Tripylaria or Phæodaria:—**

Tripylaria from Atlantic plankton, notes on, BORGERT (28); found by the German Deep-sea Expedition, general account of, HÄCKER (132) pp. 122–156.

Aulacantha, p. 47, *A. scolymantha*, p. 47, pl. i, figg. 1–3, occurrence and description, IMMERMANN (148); *A. s.*, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 161.

Aulacanthidæ, description and classification of the family, IMMERMANN (148) pp. 35–39.

Aulastrum meridionale **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28) p. 737, fig. c.

Aulatractus (?) *proteus*, Atlantic plankton, note on, BORGERT (28) p. 736, fig. B.

Auloceros, p. 49, *A. arborescens* var. *dichodendrum* **n. var.**, p. 51, pl. v, figg. 11 & 12, *A. spathillaster* var. *birameus* **n. var.**, p. 50, pl. v, fig. 10, occurrence and description, IMMERMANN (148).

Aulocoryne, p. 58, *A. candelabrum*, p. 59, pl. vi, figg. 5–7, *A. dentata*, p. 59, pl. vi, fig. 8, *A. pulvinata*, p. 60, pl. vi, fig. 9, *A. zetesios*, p. 61, pl. vii, fig. 1, occurrence and description, IMMERMANN (148).

Aulographis, p. 52, *A. pandora*, p. 53, pl. v, fig. 6, *A. tetrancistra*, p. 56, pl. v, fig. 7, *A. tridactylus* **n. sp.**, p. 55, pl. v, fig. 9, *A. uncinata* **n. sp.**, p. 55, pl. v, fig. 8, occurrence and description, IMMERMANN (148).

Aulokleptes Immerk., p. 39, *A. corona* **n. sp.**, p. 41, pl. vi, fig. 1, *A. flosculus* var. *pistillum* **n. var.**, p. 42, pl. v, fig. 1, var. *inermis* **n. var.**, p. 42, pl. iii, fig. 1, var. *tridentatus* **n. var.**, p. 43, pl. vi, fig. 3, var. *typicus* **n. var.**, p. 43, pl. v, fig. 2, pl. vi, fig. 2, var. *confluens* **n. var.**, p. 43, pl. vi, fig. 4, *A. gemmascens*, p. 44, var. *bi(tri-)partitus* **n. var.**, p. 44, pl. v, fig. 3, var. *typicus* **n. var.**, p. 44, pl. v, fig. 4, var. *sceptrum* **n. var.**, p. 45, pl. v, fig. 5, *A. ramosus* **n. sp.**, p. 45, var. *longispina* **n. var.**, p. 46, pl. iii, figg. 4 & 5, pl. iv, figg. 1–3, var. *multituberculatus* **n. var.**, p. 46, pl. iii, fig. 3, occurrence and description, IMMERMANN (148).

Aulophyton **n. g.**, p. 57, *A. tetronyx* **n. sp.**, p. 57, pl. vi, fig. 10, occurrence and description, IMMERMANN (148).

Aulospathis, p. 62, *A. bifurca*, p. 62, pl. vii, fig. 2, *A. monodon* **n. sp.**, p. 63, pl. vii, fig. 3, *A. triodon*, p. 64, pl. vii, fig. 4, occurrence and description, IMMERMANN (148); *A. pinus* **n. sp.**, diagnosed, p. 127, fig. 3, *A. variabilis*, notes on the different subspp. or varieties of, p. 125, fig. 2, HÄCKER (132).

Aulosphæra sp., in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 166.

Cadium inauris **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28), p. 747, fig. o.

Castanarium schütti **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28) p. 750.

Castanissa dahl **n. sp.**, p. 752, *C. hansen* **n. sp.**, p. 751, fig. p, Atlantic plankton, diagnosed, BORGERT (28).

Challengeria naresii, fig. 4a, *C. thomsoni*, fig. 4c, *C. tridens*, fig. 4d, *C. xiphodon*, fig. 4b, notes on, HÄCKER (132) p. 134.

Challengeron radians **n. sp.**, p. 743, fig. j, *C. sp.*, p. 744, fig. k, Atlantic plankton, notes on, BORGERT (28); *C. willemasii*, notes on, HÄCKER (132) p. 136, figg. 5a–c.

Cælechinus **n. g.**, a form intermediate between the *Cælodendridæ* and the

- Celographidæ*, for *C. wapiticornis* **n. sp.**, diagnosed, HÄCKER (132) p. 123, fig. 1.
- Celodendrum gracillimum*, p. 59, pl. xxxviii, fig. 163, *C. ramosissimum*, p. 59, pl. xxxviii, fig. 164, in plankton, Capri, LO BIANCO (205).
- Conchellium lenticula* **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28) p. 753, fig. q.
- Conchidium argiope*, p. 755, fig. r, *C. caudatum*, p. 756, fig. s, Atlantic plankton, diagnosed, BORGERT (28); *C. rhynchonella*, note on, HÄCKER (132) p. 136, fig. 7.
- Conchopsis* sp., note on, HÄCKER (132) p. 136, fig. 6.
- +*Dictyochoa fibula* (?), Miocene, Maryland, diagnosed, MARTIN (228) p. 449, pl. cxxx, fig. 3.
- +*Distephanus crux*, Miocene, Maryland, diagnosed, MARTIN (228) p. 448, pl. cxxx, figg. 1 & 2.
- Entocannula circularis*, p. 745, fig. L, *E. infundibulum*, p. 745, fig. M, Atlantic plankton, notes on, BORGERT (28).
- Gazelletta* cf. *viridis*, notes on the anatomy of, compared with that of *Planktonetta*, FOWLER (113) pp. 483-488, 3 text-figg.
- Pharyngella gastrula*, Atlantic plankton, note, BORGERT (28) p. 746, fig. N.
- Protocystis alata* **n. sp.**, p. 739, fig. E, *P. gravis* **n. sp.**, p. 741, fig. G, *P. nautiloides* **n. sp.**, p. 738, fig. D, *P. tridentata* **n. sp.**, p. 742, fig. H, *P. varians* **n. sp.**, p. 740, fig. F, Atlantic plankton, diagnoses, BORGERT (28).
- Sagenoarium* sp., Atlantic plankton, note on, BORGERT (28) p. 735, fig. A.
- Tuscaridium lucie* **n. sp.**, diagnosis and note, HÄCKER (132) pp. 140 & 149, fig. 8.
- Tuscarora bisternaria*, p. 141, fig. 9, *T. braueri* **n. sp.**, p. 143, fig. 11, var. *triangula* **n. var.**, p. 143, fig. 11a, *T. campanella* **n. sp.**, p. 143, fig. 13, *T. guleata* **n. sp.**, p. 145, fig. 12, *T. nationalis* **n. sp.**, p. 142, fig. 18, *T. scutellum* **n. sp.**, p. 143, fig. 10, occurrence and diagnoses, HÄCKER (132).
- Tuscarusa aëronauta* **n. sp.**, p. 146, fig. 16, *T. ampulla* **n. sp.**, p. 147, fig. 15, *T. chuni* **n. sp.**, p. 148, fig. 17, *T. globosa* **n. sp.**, p. 142, *T. passerula* **n. sp.**, p. 145, fig. 14, occurrence and diagnoses, HÄCKER (132).

C. SPOROZOA.

- A Sporozoan, unidentified (either a Coccidian or a Gregarine), occurrence and note on, LÉGER (183) p. 847.
- A new Sporozoan parasite of uncertain affinity, *Lymphocystis* **n. g. johnstonei** **n. sp.**, occurrence and preliminary description of, WOODCOCK (362) pp. 63-72, pl. 3.

1. TELOSPORIDEA.

(a) Gregarinidea:—

- Comparative account of development and growth in the Gregarines; their classification according to habitat, LÜHE (209) pp. 88-198, 31 text-figg.
- Cystobia irregularis* and *C. minchinii* **n. sp.**, habitat, occurrence and precocious association, or "neogamy," briefly described, WOODCOCK (364) pp. 125-128.
- Diplocystis clerci* **n. sp.**, short description of, LÉGER (189) pp. 360 & 361, text-figg. 3-5.
- Doliocystis pellucida*, attachment to intestinal host-cell described, BRASIL (41) pp. 233 & 234, text-figg. 20-22.

- Gregarina cuneata*, p. 357, text-figg. 5 & 7, *G. polymorpha*, p. 355, fig. 6, notes on development of, LÉGER & DUBOSCQ (192); *G. marteli* **n. sp.**, occurrence and short account of, LÉGER (189) pp. 358-360, text-figg. 1 & 2; *G. ovata*, general account of, PAEHLER (256) pp. 64-87, pls. v & vi.
- Steinina ovalis*, growth and development of, LÉGER & DUBOSCQ (192) p. 352, text-figg. 3 & 4.
- Stenophora aculeata* **n. sp.**, p. 368, pl. xiv, figg. 5, 14, *S. chordeumæ* **n. sp.**, p. 372, pl. xiv, figg. 11 & 15, *S. juli* (Frantz.), p. 363, pl. xiv, figg. 1-3, 13, *S. polyxeni* L. & D., p. 370, pl. xiv, fig. 6, *S. producta* **n. sp.**, p. 375, pl. xiv, figg. 7-10, *S. silene* **n. sp.**, p. 371, pl. xiv, figg. 4, 12, habitat and development described, LÉGER & DUBOSCQ (192).
- Stylorhynchus longicollis*, pl. xiv, *S. oblongatus*, pl. xv, sexual conjugation fully described in, LÉGER (188) pp. 303-357, also 8 text-figg.; *S. l.*, pp. 336-344, pl. xiii, figg. 1-16, text-figg. 1 & 2, *S. oblongatus*, pp. 344-350, pl. xiii, figg. 17-28, development and growth described, LÉGER & DUBOSCQ (192).
- Urospora lugidis*, description of trophic and sporulating phases, BRASIL (41) pp. 213-225, pl. viii, figg. 70-80, text-figg. 18.

(b) Coccidiidea:—

- Adelea transita* **n. sp.**, life-cycle partly described, LÉGER (189) pp. 361-365, text-figg. 6 & 7.
- Angiocystis* **n. g.** *audouiniiæ* **n. sp.**, occurrence and brief description, BRASIL (40) pp. 645 & 646.
- Klossiella muris* Smith and Johnson, redescribed; its schizogony compared with that of *Caryotropha mesnili*, WOODCOCK (363) pp. 153-163, 2 text-figg.

(c) Hæmosporidia:—

- Hæmocystidium* **n. g.** *simondi* **n. sp.**, occurrence and diagnosis, CASTELLANI & WILLEY (63) p. 84, figg. 10-16.
- Halteridium danilewskyi*, occurrence and note on, CASTELLANI & WILLEY (63) p. 83, figg. 7-9; *H. noctuæ*, see under *Trypanosoma n.*
- Hæmogregarina biretorta* **n. sp.**, diagnosis and occurrence, NICOLLE (249) pp. 912-914, 8 text-figg.; *H. sergentium* **n. sp.**, diagnosis and occurrence, id. (248) pp. 608 & 609; *H. tunisiensis* **n. sp.**, diagnosis and occurrence, id. (247) pp. 330-332; *H. bagensis* **n. sp.**, diagnosis and occurrence, DUCLOUX (88) pp. 564 & 565; *H. b.*, further notes on, BILLET (23) pp. 602 & 603, 8 text-figg.; *H. curvirostris* **n. sp.**, diagnosis and occurrence, id. (24) pp. 741-743, 10 text-figg.; *H. tunisiensis*, notes on, id. (21) pp. 482-484, 8 text-figg.; *H. (Karyolysus) viperini* **n. sp.**, occurrence and diagnosis, id. (22) pp. 484 & 485, 6 text-figg.; *H. callionymi* **n. sp.**, p. 614, *H. cotti* **n. sp.**, p. 614, *H. blanchardi* **n. sp.**, p. 614, *H. gobii* **n. sp.**, p. 615, and *H. quadrigemina* **n. sp.**, p. 615, occurrence and diagnosis, BRUMPT & LEBAILLY (50); *H. flesi* **n. sp.**, p. 577, *H. laternæ* **n. sp.**, p. 577, and *H. platessæ* **n. sp.**, p. 576, occurrence and diagnoses, LEBAILLY (179); *H. mauritanica* **n. sp.** (near to *H. stepanowi*), from a land tortoise, described, SERGENT (314) pp. 130 & 131; *H. mirabilis* **n. sp.**, p. 86, figg. 28-38, *H. nicoriæ* **n. sp.**, p. 85, figg. 17-27, occurrence and diagnoses, CASTELLANI & WILLEY (63); *H. psammodromi* **n. sp.**, allied to *H. sergentium*, described, SOULIÉ (327) pp. 371-373.
- Helcosoma* **n. g.** *tropicum* **n. sp.**, name proposed for the parasite of Delhi boil, Oriental sore, etc. [closely allied to *Piroplasma donovani*]; description of, and relation to host's tissues, WRIGHT (367) pp. 472-482, 4 pls.; notes on the same parasite (regarded as a *Piroplasma*), MESNIL, NICOLLE & REMLINGER (235) pp. 167-169.

- "*Leishmania*" **nom. nov.** proposed for the Leishman-Donovan parasite of Dum-dum fever [*Piroplasma donovani*], ROSS (289) pp. 79-82, 1 pl.
- "*Leucocytozoon*" *danilewskyi*, distinction of male and female forms in, BERESTNEFF (18) pp. 381-386, pl. xv.
- Piroplasma bigeminum*, p. 349, *P. canis*, p. 351, *P. equi*, p. 350, and *P. ovis*, p. 349, occurrence in Spanish animals and notes on, DIAZ VILLAR (82); *P. donovani*, relation to leucocytes and blood-corpuscles, excellent figures of, DONOVAN (83) 1 pl.; *P. d.*, minute forms, free or endoglobular, in peripheral circulation, LAVERAN & MESNIL (173) pp. 187-189; *P. d.*, (the "Leishman-Donovan bodies") development of a flagellate (Trypanosome) phase in, in cases of Kala-Azar, etc., ROGERS (286) pp. 367-377, pl. xxv; *P. hominis* **n. sp.**, causing "spotted fever" or tick-fever in man, description of, WILSON & CHOWNING (360) pp. 46-48, pl. ii.

2. NEOSPORIDIA.

(a) Myxosporidia:—

- Glugea* [= *Nosema*] *anomala*, general description of growth and development in, STEMPPELL (336) pp. 1-42, pls. i-iii; *G. cæculiæ* **n. sp.**, p. 646, fig. 16, *G. halesidotidis* **n. sp.**, p. 645, fig. 15, *G. heliotidis* **n. sp.**, p. 645, fig. 14, *G. hydriæ* **n. sp.**, p. 646, fig. 26, *G. micrattaci* **n. sp.**, p. 646, fig. 27, from Brazilian Lepidoptera, notes on spores, LUTZ & SPLENDORE (213); *G. stephani*, description of, chiefly with regard to the nature of the parasitic invasion, WOODCOCK (361) pp. 126-142, pl. ii.
- Lentospora* **nom. nov.** for *Myxobolus cerebrealis* Hofer, occurrence, diagnostic characters and description of, PLEHN (269) pp. 145-166, pl. v, 7 text-figg.
- Nosema*, see under *Glugea*.
- Sphaerospora platessæ* **n. sp.**, occurrence and diagnosis, WOODCOCK (361) p. 60, pl. ii, fig. 7d.
- Thelohanina legeri* **n. sp.**, description and development of spores, HESSE (140) pp. 570 & 571 and (141) pp. 571 & 572, 10 text-figg.; *T. mænadis* **n. sp.**, account of, and nuclear division in, PEREZ (263) pp. 214 & 215.

(b) Actinomyxidæ:—

- Sphaeractinomyxon* **n. g.** *stolci* **n. sp.**, description and development of, CAULLERY & MESNIL (64) pp. 408-410.
- Triactinomyxon*, notes on the genus, LÉGER (183) pp. 846 & 847; *T. ignotum*, sporulation of, described, LÉGER (182) pp. 844-846, 4 text-figg.

(c) Sarcosporidia:—

- Sarcocystis tenella bubali* [probably *S. siamensis* Linstow], occurrence in buffaloes and notes on, WILLEY, CHALMERS & PHILIP (359), pp. 65-72, 2 figg.

SPOROZOA INCERTÆ SEDIS.

Serosporidia:—

- Cytoryctes variolæ*, detailed account of life-cycle, relationships, and relation to the lesions in small-pox of, CALKINS (58) pp. 136-167, pls. xvi-xix; scheme of the life-history, description of the cytoplasmic phases (the "vaccinia" form) of, TYZZER (345) pp. 214-219, 225 & 226, pl. xxvi.
- Fam. *Cytoryctidæ* **n. fam.**, defined, CALKINS (58). [See under II. F.]

Caryoryctes n. g. *cytoryctoides* n. sp., an intranuclear parasite of *Paramœcium*, description and relationships, CALKINS (58) pp. 164 & 165, pl. 20.

[For various enigmatical bodies (probably, as a rule, cell-inclusions) which their describers would include in the "Sporozoon lumber-room" see end of II. c. 2.]

D. MASTIGOPHORA.

1. FLAGELLATA (EUFLAGELLATA).

(a) *Lissoflagellata* :—

Bodo lucertæ, full description of, PROWAZEK (278) pp. 19–32, pl. ii, figg. 43–50, pl. iii, pl. iv, figg. 82–87.

Chlamydomonas communis n. sp., pp. 374 & 388, fig. 1, *C. globosa* n. sp., pp. 375 & 389, *C. gracilis* n. sp., pp. 374 & 388, plankton, Lake Erie, diagnosed, SNOW (326).

Chrysosphaerella longispina Lemm., occurrence and note on, ZACHARIAS (368) p. 194, fig. 1.

Dicercomonas, distinction of the genus from *Hexamitus*, p. 130, *D. (H.) intestinalis*, p. 127, fig. 6, *D. muris*, p. 122, figg. 1–5, account of, FOA (109).

Dinobyon cylindricum, Ausgraben lakelets, Plön, notes on, LEMMERMAN (128) p. 306, figg. 2 & 3.

Euglena deses, note on, LORD (207) pp. 75 & 76, pl. iii, fig. 2.

Herpetomonas muscæ-domesticæ, full description of habitat and life-cycle, PROWAZEK (277) pp. 440–452, 7 text-figg.; *H. sarcophagæ* n. sp., occurrence and notes on, id. pp. 440 & 445; *H. subulata* n. sp., description and occurrence, LÉGER (186) pp. 613–615, 5 text-figg.; affinities of, with *H. (Crithidia) minuta*, LÉGER (187) p. 615.

Hexamitus. See under *Dicercomonas*.

Jenia annectens, description of, and processes of division in, GRASSI & FOA (126) pp. 241–253, 17 text-figg.

Mallomonas acaroides, occurrence and note on, ZACHARIAS (368) p. 205, fig. 3.

Matigamæba aspera, occurrence and description, CASH (60) p. 220, pl. xxvi, figg. 3 & 4.

Octomitus [n. g. ?] *intestinalis* n. sp., occurrence and short description, PROWAZEK (278) pp. 38 & 39, pl. iv, fig. 107.

Ocyglossa n. g. *velox* n. sp., type of a new family allied to the *Chromomonadineæ*, brief description of, GIARD (116) p. 296.

Phyllomitus amylophagus, occurrence and note on, SMITH (325) p. 48.

Spirochæta ("Hæmamæba") *ziemannii*, full account of, both in trypaniform and hæmosporidian phases, SCHAUDINN (301) pp. 429–435, 5 text-figg.

Synura uella, occurrence and note on, ZACHARIAS (368) p. 200, fig. 2.

Trichomastix lacertæ, full account of life-cycle in, PROWAZEK (278) pp. 4–19, pl. i, pl. ii, figg. 20–42.

Trichomonas intestinalis, conjugation (heterogamy) in, notes on, PROWAZEK (278) pp. 34 & 35, pl. iv, figg. 93–102; *T. lacertæ* n. sp., occurrence and short account of; agreement in main features with *T. intestinalis*, id. pp. 32–34, pl. iv, figg. 88–92.

Trichonympha agilis Leidy, division in, described, FOA (110) pp. 618–625, 5 text-figg.

Trypanophis n. g. for *Trypanosoma grobbeni*, redescribed, KEYSSELITZ (156, pp. 367–375, 3 text-figg.

Trypanoplasma borreli, redescription and affinities of, LÉGER (180) pp. 824 & 825 & (181) pp. 856–859, 5 text-figg.; *T. varium* n. sp., and its further evolution in a leech, described, id. (185) pp. 345–347; *T.* of the minnow (Léger [180]) is identical with *T. borreli* of the rudd, LAVERAN (172) p. 250.

Trypanosoma abramis n. sp., p. 388, *T. danilewskyi* n. sp., p. 386, 1 fig., *T. paddæ* n. sp., p. 361, *T. tinca* n. sp., p. 387, 2 figg., occurrence and diagnoses, LAVERAN & MESNIL (176); *T. paddæ*, described, THIROUX (342) pp. 145–148, 5 text-figg.; *T. barbatulæ* n. sp. and its further development in a leech, described, LÉGER (184) pp. 344 & 345; *T. brucei*, artificial cultivation of, NOVY & McNEAL (251) pp. 1–30; *T. b.*, good account of morphology of (unfortunately unillustrated), SCHILLING (304) pp. 484–496; *T. callionymi* n. sp., p. 613, *T. cotti* n. sp., p. 613, *T. delagei* n. sp., p. 614, *T. gobii* n. sp., p. 613, *T. limandæ* n. sp., p. 614, occurrence and diagnoses, BRUMPT & LEBAILLY (50); the parasite of sleeping-sickness (*T. castellanii* Kruse, so-called) is undoubtedly identical with that of *T.*-fever (*T. gambiense* Dutton), hence the former name is not to be retained, BRUMPT & WURTZ (53) p. 573 [in any case it could not, as *T. ugandense* would take priority]; *T. dimorphon* Dutton & Todd, different forms of, described, LAVERAN & MESNIL (174) pp. 732–734, 7 text-figg.; *T. equiperdum*, notes on different forms and habitat of, LINGARD (204) pp. 537–547; *T. evansi*, evolution of, HOLMES (146) pp. 210–214, 2 pls.; *T. flesi* n. sp., p. 577, *T. laternæ* n. sp., p. 577, *T. platessæ* n. sp., occurrence and diagnoses, LEBAILLY (179); *T. granulosum* (from the eel), multiplication of, SABRAZÈS & MURATET (295) p. 67, behaviour in sera and other liquids, id. (296) p. 159; *T. inopinatum* n. sp., from the green frog, described, SERGENT (313) pp. 123 & 124; *T. i.*, its probable ontogenetic connection with a *Drepanidium*, BILLET (20) pp. 574–576, and (26) pp. 161–163, 16 text-figg.; *T. lewisi*, observations on, BYLOFF (54) pp. 111–138, 2 pls.; *T. nelspruitense* n. sp., occurrence and description, LAVERAN (171) pp. 158–160, 2 text-figg.; *T. (Halteridium) noctuæ*, full account of, both in trypaniform and hæmosporidian phases, SCHAUDINN (301) pp. 390–429, 15 text-figg.; *T. theileri* (?), occurrence in German East Africa and remarks on, PANSE (257) pp. 376–378, 1 fig.; *T. ugandense* Castellani, is undoubtedly identical (and therefore synonymous) with *T. gambiense* Dutton, LAVERAN (165) pp. 841–844.

A Trypanosome sp. indet., noted in a rabbit, brief remarks on, PETRIE (266) pp. 484–486.

(b) **Choanoflagellata**:—Vacant.

2. SILICOFLAGELLATA.

Vacant.

3. DINOFLAGELLATA.

(a) **Adinida**:—Vacant.

(b) **Dinifera**:—

Ceratium hirundinella, plankton, Alpine lakelets, notes on, BREHM & ZEDERBAUER (42) pp. 640 & 643, figg. 4 & 5; *C. h.*, Ausgraben lakelets, Plön, note on, LEMMERMAN (198) p. 308, figg. 4–14; *C. macroceros*, p. 122, fig. 2, *C. tripos* var. *arcuatum*, p. 122, figg. 3–5, *C. t.* var. *bucephalum*, p. 125, fig. 13, *C. flagelliferum*, p. 123, figg. 6 & 7, *C. f.* var. *filiformis* n. var., p. 123, fig. 11, *C. contortum*, p. 124, fig. 9, *C. platycorne*, p. 124, fig. 10, *C. arcticum*, p. 125, fig. 14, *C. furca*, p. 126,

figg. 15 & 17-19, *C. belone*, p. 126, fig. 16, *C. gravidum*, p. 127, fig. 21, *C. lineatum*, p. 127, fig. 20, *C. fusus*, p. 127, figg. 22 & 23, var. *concava*, p. 128, fig. 24, var. *stricta* **n. var.**, p. 128, fig. 25, occurrence, Japanese Seas, and notes, OKAMURA & NISHIKAWA (253).

Glenodinium bipes **n. sp.**, occurrence, Iceland, and diagnosis, PAULSEN (258) p. 21, figg. 3 & 4.

Goniiodoma ostensfeldii **n. sp.**, occurrence and diagnosis, PAULSEN (258) p. 20, text-fig. 2.

Gonyaulax triacantha, occurrence and note on, PAULSEN (258) p. 22, fig. 5.

Heterocapsa triquetra, occurrence and note on, PAULSEN (258) p. 22, fig. 6.

Peridinium decipiens, p. 24, fig. 11, *P. islandicum* **n. sp.**, p. 23, fig. 7, *P. ovatum*, p. 23, fig. 8, *P. roseum* **n. sp.**, p. 23, fig. 9, *P. subinermis* **n. sp.**, p. 24, fig. 10, occurrence and notes on, PAULSEN (258).

4. RHYNCHOFLAGELLATA.

Noctiluca miliaris, note on abundant occurrence of, BROWNE (45) p. 121.

E. CILIOPHORA.

Fossil Infusoria (allied to *Cinetoconia*) from Coal-measures, described, RENAULT (284) pp. 25-27, pl. A.

1. CILIATA.

Ciliates, remarks on the ultimate protoplasmic structure of, FAURÉ (97) pp. 124 & 125.

(a) Holotricha:—

Anoplophrya brasili **n. sp.**, occurrence and note on, LÉGER & DUBOSCQ (193) p. 98; *A. b.*, described, id. (194) pp. 337-343, 2 text-figg.; *A. mytili*, note on, and its systematic position, RAYMOND (281) pp. 215 & 216, 2 text-figg.

Anophrys echini **n. sp.**, occurrence and description, DI MAURO (231) pp. 13-19, 3 text-figg.

Blepharostoma pigerrima, occurrence and note on, SMITH (325) p. 51.

Chilodon notamoibos **n. sp.**, described, MAGINZKY (217) pp. 1-5, 1 pl., 6 text-figg.

Dileptus gigas, hunger-periods and conjugation in, HERTWIG (139) pp. 1-3.

Discophrya gigantea, from hind-gut of *Discoglossus pictus*, general description of, COHN (77) pp. 43-53, pl. iv, figg. 1-8.

Lembus velifer, note on, SMITH (325) p. 50; (Smith would include in this sp., *L. infusionum*, *intermedius*, *ornatus* and *striatus*).

Loxodes rostrum, note on nuclei of, SMITH (325) p. 49.

Nassula sp., parasitic in cells of *Valonia*, a Siphonaceous Alga, KÜSTER (162) pp. 384-390.

Opalina intestinalis, from hind-gut of *Discoglossus pictus*, account of, COHN (77), pp. 53-62, pl. iv, figg. 9-17; *O. ranarum*, curious abnormal (?) individual of, id. p. 56, pl. iv, figg. 18 & 19; *O. ranarum*, occurrence of nuclear changes in, which are considered to represent the differentiation of a micronuclear element, LOEWENTHAL (206) pp. 387-390, 10 text-figg.; *O. saturnalis* **n. sp.**, occurrence and note on, LÉGER & DUBOSCQ (193) p. 99; *O. s.*, described, id. (195) pp. 343-356, pl. xiv.

Paramœcium bursaria, conjugation in, described, HAMBURGER (134) pp. 199-239, pls. vii-ix, 2 text-figg.; *P. caudatum*, photographs illustrative of, under different physiological conditions, CALKINS (56), 3 pls.; *P.*, basal corpuscles as points of attachment for the vibratile organellæ of, MITROPHANOW (238) pp. 167-169, figg. 3 & 4; trichocysts of, structure

and function, id. (239) pp. 78-91, 9 figg., and (241) pp. 1-18, 9 text-figg.

(b) **Heterotricha:**—

Cyttarocyclus [*Codonella*] *annulifera*, p. 128, fig. 9, *C. claparedi*, p. 125, fig. 3, *C. markusovszkyi*, p. 125, figg. 4-6, *C. orthoceras*, p. 128, figg. 10-23, *C. spiralis*, p. 125, fig. 2, *C. subulatus*, p. 128, figg. 7 & 8, occurrence and notes on, ENTZ (93).

Dictyocysta templum, p. 130, figg. 24-29, occurrence and note on, ENTZ (93).

Petalotricha [*Codonella*, *Cyttarocyclus*?] *ampulla*, p. 132, figg. 30-36, occurrence and note, ENTZ (93).

Spirostomum ambiguum, localization of respiration in the cytoplasm of, VERWORN (351) pp. 566-569.

Stentor caeruleus, effects on metabolism and division in, of different salts and nutritive conditions, PETERS (265) pp. 441-516.

Tintinnopsis karajacensis var. *acuta* n. var., occurrence and note, PAULSEN (258) p. 24, fig. 12.

Tintinnus fraknoi and *T. inquilinus*, structural details and multiplication of, SHVEIER (316) pp. 158-160, 164.

(c) **Hypotricha:**—

Gonostomum pediculiforme, note on, SMITH (325) p. 52.

(d) **Peritricha:**—

Carchesium aselli, structure of contractile stalk in, FAURÉ (98) pp. 19 & 20.

Epistylis gasterostei n. sp., *E. daphniæ* n. sp., note on structure of peduncle in, FAURÉ (101) p. 506.

Intranstylum n. g. founded on structure of peduncle in certain forms; *I. gammari* n. sp., *I. aselli* (*Carchesium a.*), structure of fixative apparatus in, FAURÉ (101) pp. 506 & 507.

Opercularia clepsinis n. sp., a colonial form, occurrence and description, POW (271) pp. 340-343, 2 figg.; *O. fabrei* n. sp., p. 188, fig. 3, *O. gracilis* n. sp., p. 187, fig. 2, *O. kenneguyi* n. sp., p. 183, fig. 1, *O. microdiscum* n. sp., p. 190, fig. 4, occurrence and description, FAURÉ (105); *O. naucoris* n. sp., and *O. stenostoma*, structure of contractile apparatus in, FAURÉ (99) pp. 576 & 577; *O. s.*, nuclear purification during division in, FAURÉ (103) p. 429.

Vaginicolineæ (*Cothurnia*, *Pyxicola*, *Vaginicola* etc.), structure and formation of the enveloping shell or "house," FAURÉ (104) pp. 551 & 552.

Vorticella citrina [see under *V. convallaria*]; *V. convallaria*, adipogenic process and formation of a pigment in, giving rise to a "*V. citrina*-" form, which is not, therefore, distinct, FAURÉ (102) pp. 390-392.

Vorticellidæ, minute structure of protoplasm in, described, FAURÉ (96) pp. 764-766.

2. SUCTORIA (TENTACULIFERA).

Astrophrya n. g. *arenaria* n. sp., occurrence and description, AVERINTZEV (6) pp. 425 & 426, 1 text-fig.

CORRIGENDUM: Protozoa 1903.

p. 45. "*Lysiopetalum lactarium*—*G. calverti*, n. sp.," should be placed under Myriapoda and not under Insecta.

INDEX TO NAMES

OF

NEW GENERA AND SUBGENERA

MENTIONED IN VOLUME XLI,

INCLUDING NEW NAMES FOR GENERA PREVIOUSLY ESTABLISHED.*

- | | |
|--|--|
| <p>Acalyptops, <i>Hartmann</i>, Ins. 171</p> <p>Acanthapophysia, <i>Popofsky</i>, Prot. 51</p> <p>Acantherus, <i>Scudder</i>, Ins. 359</p> <p>Acanthidiellum, <i>Kirkaldy</i>, Ins. 315</p> <p>Acanthochiasmarium, <i>Popofsky</i>, Prot. 51</p> <p>Acanthochiasmidium, <i>Popofsky</i>, Prot. 51</p> <p>Acanthochiasmonium, <i>Popofsky</i>, Prot. 51</p> <p>Acantholobus, <i>Hancock</i>, Ins. 359</p> <p>Acantholonche, <i>Popofsky</i>, Prot. 51</p> <p>Acanthometopon, <i>Ashmead</i>, Ins. 226</p> <p>Acanthometron, <i>Popofsky</i>, Prot. 51</p> <p>Acanthomima, <i>Kirby</i>, Ins. 355</p> <p>Acanthonia, <i>Popofsky</i>, Prot. 51</p> <p>Acanthonidium, <i>Popofsky</i>, Prot. 51</p> <p>Acanthopecten, <i>Girty</i>, Moll. 89</p> <p>Acanthoptera, <i>Popofsky</i>, Prot. 52</p> <p>Acatapaustus, <i>Bethune-Baker</i>, Ins. 254</p> <p>Acco, <i>Bethune-Baker</i>, Ins. 254</p> <p>Acheles, <i>Oudemans</i>, Arachn. 39</p> <p>Achoria, <i>Meyrick</i>, Ins. 292</p> <p>Aclemmysa, <i>Reitter</i>, Ins. 198</p> <p>Acocephalites, <i>Meunier</i>, Ins. 125</p> <p>Acolonche, <i>Popofsky</i>, Prot. 52</p> <p>Aconias, <i>Cameron</i>, Ins. 218</p> <p>Acrohyænodon, <i>Ameghino</i>, Mamm. 50</p> <p>Acromecis, <i>Mabille</i>, Ins. 251</p> | <p>Acropithecus, <i>Ameghino</i>, Mamm. 49</p> <p>Acrothoracica, <i>Gruvel</i>, Crust. 55</p> <p>Actenoptera, <i>Czerny</i>, Ins. 310</p> <p>Adiastulus, <i>Raffray</i>, Ins. 139</p> <p>Adosomus, <i>Faust</i>, Ins. 172</p> <p>Ægidinus, <i>Arrow</i>, Ins. 150</p> <p>Aella, <i>Mabille</i>, Ins. 251</p> <p>Æluroides, <i>Tullgren</i>, Ins. 210</p> <p>Æolocoris, <i>Reuter</i>, Ins. 324</p> <p>Afraniella, <i>Schouteden</i>, Ins. 315</p> <p>Afrorhytida, <i>Kobelt</i>, Moll. 61</p> <p>Agaleptus, <i>Gahan</i>, Ins. 186</p> <p>Agasicles, <i>Jacoby</i>, Ins. 190</p> <p>Agathispa, <i>Weise</i>, Ins. 196</p> <p>Agathorhipis, <i>Fauvel</i>, Ins. 162</p> <p>Agraptocoris, <i>Reuter</i>, Ins. 324</p> <p>Agriosphyræna, <i>Fowler</i>, Pisces 40</p> <p>Ainocottus, <i>Jordan and Starks</i>, Pisces 29</p> <p>Aipeiopsis, <i>Péringuey</i>, Ins. 153</p> <p>Aissoblatta, <i>Handlirsch</i>, Ins. 125</p> <p>Alabastrina, <i>Kobelt</i>, Moll. 64</p> <p>Alæops, <i>Jordan and Starks</i>, Pisces 32</p> <p>Alamprella, <i>Horváth</i>, Ins. 315</p> <p>Alchisme, <i>Kirkaldy</i>, Ins. 336</p> <p>Alcichthys, <i>Jordan and Starks</i>, Pisces 29</p> <p>Algoala, <i>Jacoby</i>, Ins. 190</p> <p>Algoasaurus, <i>Broom</i>, Rept. 29</p> <p>Allexetastes, <i>Kokujev</i>, Ins. 218</p> <p>Allochalcis, <i>Kieffer</i>, Ins. 226</p> |
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* The total number of names in this Index is 2095, distributed as follows:—*Mammalia*, 113; *Aves*, 9; *Reptilia* and *Batrachia*, 45; *Pisces*, 88; *Tunicata*, 12; *Mollusca*, 210; *Brachiopoda*, 2; *Bryozoa*, 13; *Crustacea*, 68; *Arachnida*, 97; *Myriopoda*, 23; *Insecta*, 1271; *Echinoderma*, 23; *Vermes*, 37; *Cœlenterata*, 15; *Spongiae*, 21; *Protozoa*, 48. The total last year was 2054.

- Allocosa, *Banks*, Arachn. 33
 Allocota, *Meyrick*, Ins. 292
 Alloderma, *Ashmead*, Ins. 226
 Alloconycha, *Reuter*, Ins. 325
 Allogobius, *Waite*, Pisces 31
 Alloiodoris, *Bergh*, Moll. 71
 Allokotarsa, *Péringuey*, Ins. 153
 Allonema, *Ulrich and Bassler*, Bry. 16
 Allonomyna, *Dyar*, Ins. 292
 Allothrombium, *Berlese*, Arachn. 39
 Allotrypes, *François*, Ins. 150
 Alogistotarsa, *Péringuey*, Ins. 153
 Aloha, *Kirkaldy*, Ins. 332
 Alophomyia, *Ashmead*, Ins. 226
 Alophus, *Ashmead*, Ins. 226
 Alpha, *Dalla Torre*, Ins. 207
 Althos, *Kirkaldy*, Ins. 319
 Alystria, *Cameron*, Ins. 218
 Amblysomus, *Faust*, Ins. 172
 Amelococcus, *Marchal*, Ins. 338
 Ameroseius, *Berlese*, Arachn. 39
 Ametallon, *Ashmead*, Ins. 226
 Amfortas, *Kirkaldy*, Ins. 332
 Amiana, *Dyar*, Ins. 266
 Ammodillus, *Thomas*, Mamm. 39
 Ammonella, *Walther*, Spong. 16
 Amphiacantha, *Popofsky*, Prot. 52
 Amphiareus, *Distant*, Ins. 324
 Amphilonche, *Popofsky*, Prot. 52
 Amphimetron, *Popofsky*, Prot. 52
 Amphionides, *Zimmer*, Crust. 37
 Amphitemnus, *Ameghino*, Mamm. 50
 Amphoraceras, *Bethune-Baker*, Ins. 266
 Amphoreopsis, *Crick*, Moll. 61
 Anabaia, *Clarke*, Brach. 7
 Anacamptomyia, *Bischof*, Ins. 308
 Anacanthotermes, *Jacobson*, Ins. 345
 Anacharoides, *Cameron*, Ins. 235
 Anaclastus, *Turner*, Ins. 286
 Anadiasa, *Aurivillius*, Ins. 255
 Anadolops, *Ameghino*, Mamm. 50
 Anapalta, *Warren*, Ins. 272
 Anaphragma, *Ulrich and Bassler*, Bry. 11
 Anaptilora, *Meyrick*, Ins. 292
 Anarchita, *Bolívar*, Ins. 359
 Anasopsis, *Raffray*, Ins. 139
 Anasticomerus, *Heller*, Ins. 172
 Anchitheriomys, *Roger*, Mamm. 41
 Anepsivalgus, *Kolbe*, Ins. 157
 Angeiocystis, *Brasil*, Prot. 55
 Angerianus, *Distant*, Ins. 325
 Angigaster, *Pilsbry and Hirase*, Moll. 81
 Anisodolops, *Ameghino*, Mamm. 50
 Anisolasia, *Warren*, Ins. 272
 Anisopsammia, *Marenzeller*, Cœl. 27
 Anisopsis, *Fauvel*, Ins. 133
 Annomatophilus, *Wasmann*, Ins. 133
 Anomiopsyllus, *Baker*, Ins. 313
 Anommatoxenus, *Wasmann*, Ins. 133
 Anorygma, *Horváth*, Ins. 320
 Antankaria, *Distant*, Ins. 330
 Antennocelæno, *Berlese*, Arachn. 40
 Antennurella, *Berlese*, Arachn. 40
 Anthisauripus, *Lull*, Rept. 29
 Anthodictes, *Holmberg*, Ins. 200
 Antholcus, *Konow*, Ins. 236
 Anthracentomon, *Handlirsch*, Ins. 125
 Anthraconema, *Strassen*, Verm. 52
 Anthracopalara, *Handlirsch*, Ins. 126
 Anthrenosoma, *Jordan*, Ins. 183
 Anthrocomastax, *Handlirsch*, Ins. 126
 Antiagrion, *Ris*, Ins. 348
 Antilocoris, *Kirkaldy*, Ins. 320
 Antispira, *Perner*, Moll. 82
 Antistasea, *Bischof*, Ins. 308
 Aphaneramma, *Woodward*, Rept. 40
 Aphanomastix, *Heller*, Ins. 172
 Aphobetoideus, *Ashmead*, Ins. 227
 Aphrotus, *Péringuey*, Ins. 166
 Aphylostylus, *Whiteaves*, Cœl. 28
 Aphyomerus, *Hartmann*, Ins. 172
 Apiciopsis, *Warren*, Ins. 272
 Aploderina, *Raffray*, Ins. 139
 Apiorama, *Warren*, Ins. 272
 Apocryptophagus, *Ashmead*, Ins. 227
 Aporhexius, *Raffray*, Ins. 139
 Aporodesminus, *Silvestri*, Myr. 13
 Aporotopus, *Faust*, Ins. 172
 Aptistatus, *Walsingham*, Ins. 292
 Aprunella, *Bianchi*, Aves 58
 Apsophus, *Hartmann*, Ins. 172
 Apternodus, *Matthew*, Mamm. 36
 Apterotettix, *Hancock*, Ins. 359
 Aptodrilus, *Cognetti*, Verm. 38
 Aragonia, *Ameghino*, Mamm. 50
 Araia, *Jordan and Starks*, Pisces 32
 Araspus, *Distant*, Ins. 325
 Arawacus, *Kaye*, Ins. 249
 Archæodolops, *Ameghino*, Mamm. 50
 Archæoscina, *Stebbing*, Crust. 46
 Archiascidia, *Julin*, Tun. 4
 Archoblattina, *Sellards*, Ins. 126
 Archotermopsis, *Desneux*, Ins. 345

- Arculanus, *Distant*, Ins. 325
 Arcynopteryx, *Klapálek*, Ins. 347
 Argenis, *Distant*, Ins. 325
 Argyrolagus, *Ameghino*, Mamm. 50
 Argyrolambda, *Ameghino*, Mamm. 49
 Argyromanis, *Ameghino*, Mamm. 50
 Argyrostroma, *Aurivillius*, Ins. 255
 Ariomma, *Jordan and Snyder*, Pisces 38
 Aristodacnus, *Maindron*, Ins. 128
 Armachanus, *Distant*, Ins. 325
 Arnulphus, *Distant*, Ins. 324
 Arotis, *Mabille*, Ins. 251
 Arotia, *Meyrick*, Ins. 292
 Arraphytarsa, *Péringuey*, Ins. 153
 Arrhenoplita, *Fauvel*, Ins. 166
 Arunta, *Distant*, Ins. 330
 Asbolis, *Mabille*, Ins. 251
 Aselloidea, *Richardson*, Crust. 39
 Asemogena, *Péringuey*, Ins. 166
 Asinocleonus, *Faust*, Ins. 172
 Asmunda, *Dall and Bartsch*, Moll. 82
 Aspideretes, *Hay*, Rept. 30
 Aspidosaurus, *Broili*, Rept. 40
 Astatheros, *Pellegrin*, Pisces 35
 Astatoreochromis, *Pellegrin*, Pisces 36
 Astatotilapia, *Pellegrin*, Pisces 36
 Astratus, *Fairmaire*, Ins. 172
 Astrocharis, *Koehler*, Echin. 81
 Astrodia, *Verrill*, Echin. 82
 Astrophrya, *Averintzev*, Prot. 60
 Atactogaster, *Faust*, Ins. 172
 Atelias, *Kirkaldy*, Ins. 315
 Atenisodus, *Raffray*, Ins. 140
 Atherinomorus, *Fowler*, Pisces 41
 Atlantotlos, *Doflein*, Crust. 31
 Audernacus, *Distant*, Ins. 322
 Aulacomima, *Meyrick*, Ins. 292
 Aulocyathus, *Marenzeller*, Cœl. 28
 Aulophyton, *Immermann*, Prot. 53
 Aulopocella, *Maplestone*, Bry. 13
 Auriptygma, *Perner*, Moll. 82
 Avellopsis, *Purcell*, Arachn. 22
 Aximogastra, *Ashmead*, Ins. 227
 Aximopsis, *Ashmead*, Ins. 227
 Axiologa, *Turner*, Ins. 255
 Axiothella, *Verrill*, Verm. 32
 Azuma, *Needham*, Ins. 348
 Bæosomus, *Brown*, Ins. 172
 Baldra, *Dall and Bartsch*, Moll. 83
 Baliosus, *Weise*, Ins. 196
 Ballonema, *Verhoeff*, Myr. 9
 Baptarma, *Smith*, Ins. 266
 Baptopoda, *Bernhauer*, Ins. 134
 Barentsia, *Stebbing*, Crust. 43
 Barra, *Jordan*, Ins. 183
 Bartacus, *Distant*, Ins. 322
 Baruna, *Stebbing*, Crust. 30
 Bathmedonia, *Reichenow*, Aves 56
 Bathypera, *Michaelsen*, Tun. 5
 Batribolbus, *Raffray*, Ins. 140
 Batrisiella, *Raffray*, Ins. 140
 Batrisomalus, *Raffray*, Ins. 140
 Bayerus, *Distant*, Ins. 322
 Bergias, *Kirkaldy*, Ins. 332
 Bergrothina, *Schouteden*, Ins. 316
 Bergthora, *Kirkaldy*, Ins. 315
 Beriqua, *Péringuey*, Ins. 153
 Berlieria, *Loriol*, Moll. 82
 Bero, *Jordan and Starks*, Pisces 29
 Berthais, *Melville*, Moll. 82
 Bertsa, *Kirkaldy*, Ins. 324
 Besla, *Dall and Bartsch*, Moll. 83
 Beta, *Dalla Torre*, Ins. 207
 Betulodes, *Thierry-Mieg*, Ins. 273
 Bibiodes, *Coquillett*, Ins. 302
 Bibla, *Mabille*, Ins. 251
 Biblomimus, *Raffray*, Ins. 140
 Bimicroporella, *Canu*, Bry. 13
 Birulia, *Brazhnikov*, Crust. 35
 Blaberops, *Jordan*, Ins. 183
 Blæsochaetophora, *Czerny*, Ins. 310
 Blatticida, *Ashmead*, Ins. 227
 Blattivorus, *Chobaut*, Ins. 170
 Blattodromus, *Reitter*, Ins. 145
 Boethoos, *Kirkaldy*, Ins. 336
 Bolbophites, *Fauvel*, Ins. 134
 Boloceropsis, *McMurrich*, Cœl. 28
 Bolosoma, *Ijima*, Spong. 15
 Bombylodes, *Fauvel*, Ins. 134
 Boopinus, *Klima*, Ins. 134
 Bothriocerodes, *Fowler*, Ins. 332
 Bothriogaster, *Fuhrmann*, Verm. 48
 Bothrochalcis, *Cameron*, Ins. 235
 Botocudo, *Kirkaldy*, Ins. 320
 Botteria, *Brusina*, Moll. 64
 Boulengerochromis, *Pellegrin*, Pisces 35
 Brabiroides, *Warren*, Ins. 273
 Brachybrachium, *Williston*, Rept. 33
 Brachycaudonia, *Ashmead*, Ins. 227
 Brachyleonius, *Faust*, Ins. 173
 Brachyctenistis, *Warren*, Ins. 273
 Brachymitra, *Kolbe*, Ins. 157
 Brachynillus, *Reitter*, Ins. 129
 Brachyphyma, *Horváth*, Ins. 320
 Brachypodopsis, *Piersig*, Arachn. 40
 Brachystichia, *Warren*, Ins. 273
 Brachytrita, *Swinhoe*, Ins. 273
 Bradamina, *Fairmaire*, Ins. 190
 Bradyrus, *Gill*, Pisces 39

- Brassivola, *Distant*, Ins. 322
 Braunsella, *Buckman*, Moll. 60
 Brepholoxa, *van Duzee*, Ins. 316
 Broconius, *Desbrochers*, Ins. 173
 Brontispa, *Sharp*, Ins. 196
 Brontostoma, *Kirkaldy*, Ins. 322
 Bruchobius, *Ashmead*, Ins. 227
 Brulleia, *Szépligeti*, Ins. 224
 Bryaxina, *Raffray*, Ins. 140
 Bryocrypta, *Meunier*, Ins. 124
 Bryothinusa, *Casey*, Ins. 134
 Buena, *Kirkaldy*, Ins. 329
 Bulua, *Boulenger*, Rept. 36
 Bunoderus, *Raffray*, Ins. 140
 Burma, *Kirkaldy*, Ins. 315
 Burtonilla, *Smith*, Moll. 79
 Busseola, *Thurau*, Ins. 266
 Buttia, *Warren*, Ins. 273

 Cabnia, *Dyar*, Ins. 287
 Cacama, *Distant*, Ins. 330
 Cacotherapia, *Dyar*, Ins. 287
 Cadmon, *Cambridge*, Arachn. 21
 Caducifer, *Dall*, Moll. 77
 Cænophilus, *Ameghino*, Mamm. 49
 Calamacris, *Rehn*, Ins. 359
 Caliothrips, *Daniel*, Ins. 349
 Callanthribus, *Jordan*, Ins. 183
 Callergates, *Lameere*, Ins. 186
 Callicratides, *Distant*, Ins. 325
 Callipona, *Turner*, Ins. 273
 Calliseidus, *Horváth*, Ins. 320
 Callismicra, *Kieffer*, Ins. 227
 Callogyra, *Verrill*, Cœl. 28
 Callolongchæus, *Dall and Bartsch*,
 Moll. 83
 Callomegas, *Lameere*, Ins. 186
 Calloporina, *Ulrich and Bassler*,
 Bry. 11
 Callygris, *Thierry-Mieg*, Ins. 273
 Calodemus, *Faust*, Ins. 173
 Calveria, *Delage*, Echin. 76
 Campylotropis, *Reuter*, Ins. 325
 Canavarella, *Buckman*, Moll. 60
 Canavarina, *Buckman*, Moll. 60
 Cancellariella, *Martin*, Moll. 74
 Capellanus, *Distant*, Ins. 325
 Caradrinopsis, *Swinhoe*, Ins. 273
 Cardiocephalus, *Broili*, Rept. 40
 Carpaulum, *Sloane*, Ins. 129
 Caryoryctes, *Calkins*, Prot. 57
 Casmenella, *Jacoby*, Ins. 191
 Catageomyia, *Theobald*, Ins. 299
 Catagonus, *Ameghino*, Mamm. 50
 Cattania, *Brusina*, Moll. 64
 Caudellia, *Dyar*, Ins. 287
 Cecidoxenus, *Ashmead*, Ins. 227

 Cedusa, *Fowler*, Ins. 332
 Centrobranchus, *Fowler*, Pisces 44
 Centrocidaris, *Agassiz*, Echin. 54
 Centromantis, *Werner*, Ins. 355
 Centrophthalmosis, *Raffray*, Ins.
 140
 Centrosaurus, *Lambe*, Rept. 29
 Cephaleuropoda, *Berlese*, Arachn. 40
 Ceramba, *Fauvel*, Ins. 166
 Cerapteroceroides, *Ashmead*, Ins.
 227
 Ceraticus, *Caudell*, Ins. 356
 Cerato, *Meunier*, Ins. 125
 Ceratostmicra, *Ashmead*, Ins. 227
 Cercoceropsis, *Raffray*, Ins. 141
 Cercocerulus, *Raffray*, Ins. 141
 Ceroniola, *Wilckens*, Moll. 87
 Cervellus, *Szépligeti*, Ins. 224
 Cervulus, *Szépligeti*, Ins. 224
 Chacoana, *Holmberg*, Ins. 201
 Chaetoclusia, *Coquillett*, Ins. 310
 Chaetoleistus, *Semenov*, Ins. 129
 Chalepogenus, *Holmberg*, Ins. 201
 Chaliniastis, *Meyrick*, Ins. 292
 Challia, *Burr*, Ins. 352
 Chamus, *Distant*, Ins. 325
 Charadriola, *Madarasz*, Aves 64
 Charitocoris, *Reuter*, Ins. 325
 Charitovalgus, *Kolbe*, Ins. 157
 Chaunangium, *Schulze*, Spong. 15
 Cheiridella, *Jacoby*, Ins. 191
 Cheiriphotis, *Walker*, Crust. 44
 Cheletoides, *Oudemans*, Arachn. 40
 Cheletomimus, *Oudemans*, Arachn.
 40
 Cheletomorpha, *Oudemans*, Arachn.
 40
 Cheletophanes, *Oudemans*, Arachn.
 40
 Cheletopsis, *Oudemans*, Arachn. 40
 Chelyoposaurus, *Broom*, Rept. 33
 Chenniopsis, *Raffray*, Ins. 141
 Chenogaster, *Lahille*, Pisces 33
 Chevalia, *Walker*, Crust. 44
 Chiasmocleis, *Méhely*, Rept. 37
 Chirognatha, *Sars*, Crust. 50
 Chlamydes, *Jenkins*, Pisces 31
 Chloeria, *Abille*, Ins. 251
 Chlorochaeta, *Warren*, Ins. 274
 Chlorosomella, *Reuter*, Ins. 325
 Choanocystis, *Penard*, Prot. 50
 Chonaphe, *Cook*, Myr. 14
 Chondrolepis, *Abille*, Ins. 251
 Choniocardia, *Cossmann*, Moll. 88
 Chorizocarpa, *Michaelsen*, Tun. 5
 Chromotydaeus, *Berlese*, Arachn. 40
 Chrysatomus, *Ashmead*, Ins. 227
 Chrysonotomyia, *Ashmead*, Ins. 227

- Cionellus, *Reitter*, Ins. 174
 Cirrhitoides, *Jenkins*, Pisces 38
 Cirropsis, *Perner*, Moll. 84
 Cirrospiloideus, *Ashmead*, Ins. 228
 Cladocerapis, *Cockerell*, Ins. 201
 Cladodidelphys, *Ameghino*, Mamm. 50
 Clapmarius, *Distant*, Ins. 325
 Clavellofus, *Grabau*, Moll. 76
 Clavulites, *Girty*, Moll. 86
 Cleisthenes, *Jordan and Starks*, Pisces 32
 Clenia, *Ameghino*, Mamm. 50
 Cleptidea, *Mocsáry*, Ins. 217
 Clitotrema, *Simon*, Arachn. 21
 Clusiodes, *Coquillett*, Ins. 310
 Clypeasta, *Fairmaire*, Ins. 153
 Clytocerus, *Eaton*, Ins. 302
 Cochlearites, *Reis*, Moll. 90
 Cochlespiropsis, *Casey*, Moll. 74
 Cœlechinus, *Häcker*, Prot. 53
 Cœlochalcis, *Cameron*, Ins. 228
 Celojoppa, *Cameron*, Ins. 219
 Colgorma, *Kirkaldy*, Ins. 332
 Collybus, *Snyder*, Pisces 27
 Colobodes, *Meyrick*, Ins. 293
 Colpoglossus, *Boulenger*, Rept. 37
 Combalus, *Distant*, Ins. 325
 Compsocalyx, *Schulze*, Spong. 14
 Compsoglypha, *Fairmaire*, Ins. 159
 Conohalictoides, *Viereck*, Ins. 202
 Conothoa, *Lyon*, Mamm. 42
 Copeichthys, *Dollo*, Pisces 50
 Coptoeme, *Aurivillius*, Ins. 186
 Coralloerangon, *Nobili*, Crust. 35
 Cordyloides, *Fritsch*, Rept. 40
 Corymbitodes, *du Buysson*, Ins. 161
 Cosmina, *Perner*, Moll. 85
 Cosmogaster, *Faust*, Ins. 175
 Cosmolapids, *Berlese*, Arachn. 41
 Cosmolithes, *Grabau*, Moll. 76
 Cossmannica, *Dall and Bartsch*, Moll. 83
 Cottiusculus, *Jordan and Starks*, Pisces 29
 Craspedotis, *Meyrick*, Ins. 293
 Craspedotriton, *Dall*, Moll. 77
 Cremifania, *Czerny*, Ins. 310
 Crescentius, *Distant*, Ins. 324
 Cribricella, *Canu*, Bry. 14
 Crætopola, *Meyrick*, Ins. 293
 Crossias, *Jordan and Starks*, Pisces 29
 Crymus, *Fauvel*, Ins. 134
 Cryptohalictoides, *Viereck*, Ins. 202
 Cryptoscopa, *Turner*, Ins. 274
 Ctenicellus, *Raffray*, Ins. 141
 Ctenisomimus, *Raffray*, Ins. 141
 Ctenocephalus, *Linstow*, Verm. 52
 Ctenodrapetis, *Bezzi*, Ins. 305
 Ctenoglypta, *Ancey*, Moll. 62
 Ctenolophus, *Purcell*, Arachn. 21
 Ctenophryne, *Mocquard*, Rept. 36
 Culicada, *Felt*, Ins. 300
 Culicella, *Felt*, Ins. 300
 Culicella, *Felt*, Ins. 300
 Culiseta, *Felt*, Ins. 300
 Cultriopsis, *Cossmann*, Moll. 90
 Cyanaspis, *Weise*, Ins. 197
 Cycethra, *Bethune-Baker*, Ins. 257
 Cyclochoria, *Stichel*, Ins. 246
 Cyclostropis, *Perner*, Moll. 85
 Cyclumna, *Fowler*, Ins. 332
 Cylichnopsis, *Cossmann*, Moll. 73
 Cymatomorpha, *Meyrick*, Ins. 293
 Cynodonichthys, *Meek*, Pisces 42
 Cynthiopsis, *Michaelsen*, Tun. 5
 Cyphodemidea, *Reuter*, Ins. 326
 Cyphotrypa, *Ulrich and Bassler*, Bry. 12
 Cyrtocoris, *Aurivillius*, Ins. 187
 Cyrtoplectus, *Raffray*, Ins. 141
 Cyrtura, *Jaekel*, Rept. 33
 Cystomastax, *Szépligeti*, Ins. 224
 Cystopsaltria, *Goding and Froggatt*, Ins. 330
 Cytosoma, *Gilchrist*, Pisces 33
 Dactylopoda, *Sars*, Crust. 50
 Dagbertus, *Distant*, Ins. 326
 Daldorfia, *Rathbun*, Crust. 28
 Dalla, *Mabille*, Ins. 251
 Damellera, *Kirkaldy*, Ins. 315
 Dandinus, *Distant*, Ins. 316
 Danielsia, *Theobald*, Ins. 300
 Darellella, *Buckman*, Moll. 60
 Darellina, *Buckman*, Moll. 60
 Darpasus, *Cameron*, Ins. 219
 Daruma, *Jordan and Starks*, Pisces 29
 Darymna, *Cameroon*, Ins. 219
 Dasychiroides, *Bethune-Baker*, Ins. 257
 Dasyleurotettix, *Rehn*, Ins. 360
 Dasyrhopala, *Jordan*, Ins. 184
 Dasysterna, *Turner*, Ins. 275
 Dasylagus, *Holbe*, Ins. 157
 Dawsonites, *Böhm*, Moll. 60
 Decatelia, *Weise*, Ins. 197
 Decatomothorax, *Ashmead*, Ins. 228
 Decterias, *Jordan and Starks*, Pisces 30
 Dectobathra, *Meyrick*, Ins. 293
 Deinopygia, *Warren*, Ins. 275
 Delios, *Portevin*, Ins. 145

- Delos, *Hutton*, Moll. 64
 Deltonotus, *Hancock*, Ins. 360
 Dendroterus, *Blandford*, Ins. 182
 Dermatonotus, *Méhely*, Rept. 37
 Deropoda, *Bernhauer*, Ins. 134
 Derosimus, *Fairmaire*, Ins. 166
 Dersagrena, *Kirkaldy*, Ins. 319
 Desmosyllis, *Verrill*, Verm. 32
 Deuterapoica, *Dalla Torre*, Ins. 207
 Deuterodiscoelius, *Dalla Torre*, Ins. 207
 Deuteroptila, *Meyrick*, Ins. 293
 Devarodes, *Warren*, Ins. 275
 Dewetia, *Bischof*, Ins. 308
 Dewetia, *Buturlin*, Aves 65
 Dexistes, *Jordan and Starks*, Pisces 32
 Diaphoroserica, *Péringuey*, Ins. 153
 Diaposis, *Raffray*, Ins. 141
 Diascopea, *Horváth*, Ins. 320
 Diaugis, *Raffray*, Ins. 141
 Dialomomorpha, *Ashmead*, Ins. 228
 Diaulus, *Ashmead*, Ins. 228
 Diceratoptyx, *Pilsbry*, Moll. 68
 Diceratucha, *Swinhoe*, Ins. 275
 Dichelotrox, *Heller*, Ins. 175
 Dicranotropis, *Faust*, Ins. 175
 Dictynina, *Banks*, Arachn. 22
 Dictyogenus, *Klapálek*, Ins. 347
 Dictyopterygella, *Klapálek*, Ins. 347
 Dicyrtocercyon, *Ganglbauer*, Ins. 133
 Didymolophus, *Fairmaire*, Ins. 161
 Dientomochilus, *Cossmann*, Moll. 77
 Diestesoma, *Péringuey*, Ins. 166
 Diffugiella, *Cash*, Prot. 43
 Diglyphomorpha, *Ashmead*, Ins. 228
 Dilatilabrum, *Cossmann*, Moll. 77
 Dimmockia, *Ashmead*, Ins. 228
 Dinawa, *Bethune-Baker*, Ins. 257
 Dinosis, *Fairmaire*, Ins. 176
 Dioclophara, *Kirkaldy*, Ins. 336
 Diotrodes, *Coquillett*, Ins. 304
 Diognetus, *Distant*, Ins. 326
 Diploctena, *Turner*, Ins. 275
 Diploglena, *Purcell*, Arachn. 24
 Diplophryxus, *Richardson*, Crust. 41
 Discolepis, *Ancey*, Moll. 64
 Discopterella, *Semenow*, Ins. 129
 Discovermetulus, *Rovéreto*, Moll. 78
 Discoxenus, *Wasmann*, Ins. 135
 Distasis, *Handlirsch*, Ins. 126
 Distega, *Konow*, Ins. 236
 Disteiromys, *Ameghino*, Mamm. 50
 Dithmarus, *Distant*, Ins. 322
 Diversosexus, *Bethune-Baker*, Ins. 257
 Doderia, *Silvestri*, Myr. 13
 Dodonæus, *Distant*, Ins. 322
 Doleroserica, *Péringuey*, Ins. 153
 Dolerotarsa, *Péringuey*, Ins. 153
 Dolichisme, *Kirkaldy*, Ins. 315
 Dolichobrachiun, *Williston*, Rept. 33
 Domoptolis, *Jordan*, Ins. 184
 Donaldia, *Perner*, Moll. 86
 Dorata, *Busck*, Ins. 293
 Dorelogena, *Péringuey*, Ins. 166
 Dorylocerus, *Wasmann*, Ins. 135
 Dorylogaster, *Wasmann*, Ins. 135
 Dorylomimus, *Wasmann*, Ins. 135
 Dorylonia, *Wasmann*, Ins. 135
 Dorylonilla, *Wasmann*, Ins. 135
 Dorylophila, *Wasmann*, Ins. 135
 Dorylopora, *Wasmann*, Ins. 135
 Dragmatyle, *Topsent*, Spong. 24
 Drasinus, *Raffray*, Ins. 141
 Drassinella, *Banks*, Arachn. 24
 Drobacia, *Brusina*, Moll. 65
 Dromeciton, *Fauvel*, Ins. 135
 Drosomyia, *De Meijere*, Ins. 310
 Dryaphis, *Kirkaldy*, Ins. 337
 Dryopeia, *Kirkaldy*, Ins. 337
 Dunbrodianus, *Pic*, Ins. 170
 Dupotetia, *Kobelt*, Moll. 65
 Durbana, *Warren*, Ins. 275
 Dyadentomum, *Handlirsch*, Ins. 125
 Dyadozoarium, *Handlirsch*, Ins. 125
 Ebæomorphus, *Pic*, Ins. 162
 Ebosia, *Jordan and Starks*, Pisces 30
 Ebbletodes, *Turner*, Ins. 287
 Eccoptoglossa, *Luze*, Ins. 135
 Ecculex, *Felt*, Ins. 300
 Echinodiscaster, *Delage*, Echin. 77
 Echinomegistus, *Berlese*, Arachn. 41
 Echinoseius, *Ribaya*, Arachn. 41
 Ectocyclops, *Brady*, Crust. 50
 Ectopocerus, *Raffray*, Ins. 141
 Egapista, *Cockerell*, Ins. 202
 Egila, *Dall and Bartsch*, Moll. 83
 Eisenia, *Ashmead*, Ins. 228
 Elacatinus, *Jordan*, Pisces 31
 Elachertomorpha, *Ashmead*, Ins. 228
 Elachisme, *Kirkaldy*, Ins. 319
 Elaphocranus, *Bergroth*, Ins. 322
 Eleusomatus, *Raffray*, Ins. 141
 Eleusoptamus, *Raffray*, Ins. 141
 Eleutherocaris, *Clarke*, Crust. 47
 Elliptodactylus, *Doflein*, Crust. 29
 Empheremyia, *Bischof*, Ins. 308
 Empysarus, *Martin*, Ins. 317
 Encoma, *Swinhoe*, Ins. 275
 Encryphia, *Turner*, Ins. 275
 Encyrtaspis, *Ashmead*, Ins. 228

- Energoponus, *Holmberg*, Ins. 202
 Enicosoma, *Lewis*, Ins. 146
 Enidia, *Smith*, Arachn. 27
 Enneasmicra, *Ashmead*, Ins. 228
 Enteroxenos, *Bonnerie*, Moll. 83
 Entogonia, *Warren*, Ins. 275
 Entogonites, *Kittl*, Moll. 60
 Entomotrogus, *Ganglbauer*, Ins. 148
 Eoarmadillidium, *Dollfus*, Crust. 42
 Eobrissus, *Bell*, Echin. 60
 Eoclathurella, *Casey*, Moll. 74
 Eodrillia, *Casey*, Moll. 74
 Eohemera, *Aurivillius*, Ins. 258
 Eosurcula, *Casey*, Moll. 74
 Epanaphe, *Aurivillius*, Ins. 258
 Eparmene, *Fowler*, Ins. 333
 Epelictis, *Meyrick*, Ins. 293
 Ephimeronotus, *Faust*, Ins. 176
 Ephutopsis, *Ashmead*, Ins. 211
 Ephymata, *Raffray*, Ins. 141
 Epibrontis, *Meyrick*, Ins. 293
 Epichalcoplethis, *Arrow*, Ins. 155
 Epicoleotichus, *Schouteden*, Ins. 317
 Epilectus, *Faust*, Ins. 176
 Epimastis, *Meyrick*, Ins. 293
 Epimonispractor, *Holmberg*, Ins. 202
 Epinebriola, *Daniel*, Ins. 130
 Epipatriarchus, *Ameghino*, Mamm. 49
 Epipeltephilus, *Ameghino*, Mamm. 51
 Epipheidole, *Wheeler*, Ins. 215
 Epipteromalus, *Ashmead*, Ins. 228
 Episagaceras, *Noetling*, Moll. 60
 Eremattus, *Banks*, Arachn. 35
 Eremica, *Walsingham*, Ins. 293
 Eremomus, *Raffray*, Ins. 141
 Eremopezus, *Andrews*, Aves. 37
 Erginoides, *Cambridge*, Arachn. 38
 Ericteis, *Jordan*, Pisces 27
 Erigonidium, *Smith*, Arachn. 28
 Erisphex, *Jordan and Starks*, Pisces 31
 Eriximachus, *Distant*, Ins. 322
 Erlandia, *Aurivillius*, Ins. 187
 Erosa, *Jordan and Starks*, Pisces 31
 Erotylopsis, *Jordan*, Ins. 184
 Erythrocheylus, *Berlese*, Arachn. 41
 Estuidus, *Distant*, Ins. 326
 Eteoneus, *Kirkaldy*, Ins. 336
 Etiserica, *Péringuey*, Ins. 153
 Etorleptiomyia, *Theobald*, Ins. 300
 Euænarina, *Breddin*, Ins. 317
 Eualastor, *Dalla Torre*, Ins. 207
 Euancistrocerus, *Dalla Torre*, Ins. 207
 Eubordeta, *Rothschild*, Ins. 276
 Eubrachiosaurus, *Williston*, Rept. 33
 Eucalantica, *Busck*, Ins. 293
 Euceramius, *Dalla Torre*, Ins. 207
 Eucratherium, *Furlong and Sinclair*, Mamm. 43
 Euchræodes, *Nurse*, Ins. 217
 Eucleonus, *Faust*, Ins. 176
 Euclymene, *Verrill*, Verm. 32
 Eucyclotropis, *Jordan*, Ins. 184
 Eucynopotamus, *Fowler*, Pisces 49
 Eudiscœlius, *Friese*, Ins. 207
 Euembia, *Verhoeff*, Ins. 346
 Euepipona, *Dalla Torre*, Ins. 207
 Eufroggattia, *Ashmead*, Ins. 228
 Eugoides, *Aurivillius*, Ins. 187
 Euginodes, *Jordan*, Ins. 184
 Eugonops, *Jordan*, Ins. 184
 Eugrymœa, *Verrill*, Verm. 36
 Eugyrina, *Dall*, Moll. 77
 Euiherdmania, *Ritter*, Tun. 6
 Euidosomus, *Reitter*, Ins. 176
 Eukoebela, *Ashmead*, Ins. 228
 Eulælaps, *Berlese*, Arachn. 41
 Eulambda, *Ameghino*, Mamm. 49
 Eulophopteryx, *Ashmead*, Ins. 228
 Eumasia, *Chrétien*, Ins. 293
 Eumilionia, *Thierry-Mieg*, Ins. 276
 Eumontezumia, *Dalla Torre*, Ins. 208
 Eunonia, *Casey*, Ins. 135
 Euodynerus, *Dalla Torre*, Ins. 208
 Euophthalmomyia, *Ashmead*, Ins. 228
 Euparatettix, *Hancock*, Ins. 360
 Eupedetes, *Scudder*, Ins. 360
 Eupera, *Michaelsen*, Tun. 6
 Euphalerus, *Schwarz*, Ins. 337
 Euphlæobius, *Jordan*, Ins. 184
 Eupododus, *Kirkaldy*, Ins. 315
 Eupolistes, *Dalla Torre*, Ins. 208
 Eupolybia, *Dalla Torre*, Ins. 208
 Eupolymnia, *Verrill*, Verm. 32
 Euproctilla, *Aurivillius*, Ins. 258
 Euprotherotherium, *Ameghino*, Mamm. 50
 Eupsorus, *Brown*, Ins. 135
 Eurhythma, *Turner*, Ins. 287
 Euronycha, *Péringuey*, Ins. 153
 Eurhynchium, *Dalla Torre*, Ins. 208
 Euryalus, *Matschie*, Mamm. 34
 Eurygnathomyia, *Czerny*, Ins. 310
 Eusayia, *Ashmead*, Ins. 229
 Eusintor, *Jordan*, Ins. 184
 Eusirogenes, *Stebbing*, Crust. 44
 Eusomatulus, *Reitter*, Ins. 176
 Eustypiura, *Ashmead*, Ins. 229

- Eusynagris*, *Dalla Torre*, Ins. 208
Eusynstyela, *Michaelsen*, Tun. 6
Euteleia, *Raffray*, Ins. 142
Eutrichocera, *Hampson*, Ins. 288
Eutrigaster, *Cognetti*, Verm. 38
Eutritonium, *Cossmann*, Moll. 77
Euvacus, *Casey*, Ins. 169
Euvipio, *Szépligeti*, Ins. 224
Euvonymus, *Distant*, Ins. 323
Euzethus, *Dalla Torre*, Ins. 208
Evalina, *Dall and Bartsch*, Moll. 83
Eviota, *Jenkins*, Pisces 31
Eviphis, *Berlese*, Arachn. 42
Exallus, *Raffray*, Ins. 142
Excorallana, *Stebbing*, Crust. 40
Exechontis, *Jordan*, Ins. 184
Exoristobia, *Ashmead*, Ins. 229

Fæsula, *Cameron*, Ins. 220
Fagina, *Attems*, Myr. 13
Fajumia, *Stromer*, Pisces 46
Falconeria, *Smith*, Arachn. 28
Falsifusus, *Grabau*, Moll. 76
Faroella, *Wolfenden*, Crust. 50
Faustina, *Kobelt*, Moll. 65
Felisacus, *Distant*, Ins. 326
Femoriferus, *Attems*, Myr. 15
Fingulus, *Distant*, Ins. 326
Florchisme, *Kirkaldy*, Ins. 332
Fœnomorpha, *Szépligeti*, Ins. 224
Fokkeria, *Schouteden*, Ins. 317
Folinella, *Dall and Bartsch*, Moll. 83
Forcipator, *Maindron*, Ins. 130
Frechiella, *Prinz*, Moll. 60
Fritschia, *Picard*, Moll. 82
Froekenia, *Hoyle*, Moll. 60
Froggattia, *Ashmead*, Ins. 229
Fulgentius, *Distant*, Ins. 326
Fulgurofusus, *Grabau*, Moll. 76
Furcina, *Jordan and Starks*, Pisces 29
Fusitoma, *Casey*, Moll. 74

Gabriola, *Taylor*, Ins. 277
Galeodopsis, *Birula*, Arachn. 36
Gallea, *Walker*, Crust. 44
Gallobelicus, *Distant*, Ins. 326
Galopagomyia, *Bischof*, Ins. 309
Gamasholaspis, *Berlese*, Arachn. 42
Gamasiphis, *Berlese*, Arachn. 42
Gamka, *Péringuey*, Ins. 153
Gastroxys, *Horváth*, Ins. 317
Gazanus, *Péringuey*, Ins. 130
Gelastogonia, *Kirkaldy*, Ins. 336
Gelastophantia, *Kirkaldy*, Ins. 332
Gelastophara, *Kirkaldy*, Ins. 336

Gelastyra, *Kirkaldy*, Ins. 332
Gelchossa, *Kirkaldy*, Ins. 321
Geniohyus, *Andrews*, Mamm. 44
Genophion, *Felt*, Ins. 220
Geolycosa, *Montgomery*, Arachn. 33
Gerontia, *Schaus*, Ins. 259
Getotherium, *Ameghino*, Mamm. 49
Girardotia, *Loriol*, Moll. 87
Gismunda, *Distant*, Ins. 326
Glanosuchus, *Broom*, Rept. 32
Glaphyrocoris, *Reuter*, Ins. 326
Glaucoptaltia, *Goding and Froggatt*, Ins. 330
Glochinocerus, *Blandford*, Ins. 182
Glossopeltis, *Reuter*, Ins. 326
Glyphopsyche, *Banks*, Ins. 341
Glyptotoma, *Casey*, Moll. 74
Godefridus, *Distant*, Ins. 323
Golasa, *Raffray*, Ins. 142
Gonaulax, *Schouteden*, Ins. 317
Goniocœus, *Jordan*, Ins. 184
Goniodon, *Perrier*, Echin. 77
Gonochlora, *Swinhoe*, Ins. 277
Gonopithecus, *Ameghino*, Mamm. 49
Gonopterus, *Brown*, Ins. 176
Grammicopteryx, *Thierry-Mieg*, Ins. 277
Grammoa, *Aurivillius*, Ins. 259
Grandidierella, *Coutière*, Crust. 44
Greeleyella, *Cockerell*, Ins. 202
Grimgerda, *Kirkaldy*, Ins. 315
Gronovius, *Jacoby*, Ins. 192
Grubeosyllis, *Verrill*, Verm. 33
Gryphonycha, *Péringuey*, Ins. 153
Guentheridia, *Gilbert and Starks*, Pisces 25
Gueriniellus, *Kirkaldy*, Ins. 315
Guisardus, *Distant*, Ins. 326
Gulbarentsia, *Stebbing*, Crust. 44
Gynandrosoma, *Dyar*, Ins. 291
Gyostega, *Warren*, Ins. 277

Haaniella, *Kirby*, Ins. 356
Hæckelia, *Kirkaldy*, Ins. 319
Hæmocyetidum, *Castellani and Willey*, Prot. 55
Hæmodipsas, *Enderlein*, Ins. 340
Hæmus, *Péringuey*, Ins. 166
Haggardia, *Warren*, Ins. 277
Haldra, *Dall and Bartsch*, Moll. 83
Halistrepta, *Dall*, Moll. 87
Halosoma, *Cole*, Crust. 61
Hamadryaphis, *Kirkaldy*, Ins. 337
Hamza, *Distant*, Ins. 330
Haplaxius, *Fowler*, Ins. 333
Haploembia, *Verhoeff*, Ins. 346

- Haplomylomys, *Osgood*, Mamm. 40
 Haplotropidius, *Müller*, Ins. 145
 Hapochraeus, *Raffray*, Ins. 142
 Harmomima, *Raffray*, Ins. 142
 Harpape, *Cook*, Myr. 14
 Harpedona, *Distant*, Ins. 326
 Haullevillea, *Schouteden*, Ins. 317
 Hedyjoppa, *Cameron*, Ins. 220
 Heeriella, *Meunier*, Ins. 125
 Heida, *Dall and Bartsch*, Moll. 83
 Heilprinia, *Grabau*, Moll. 76
 Helcosoma, *Wright*, Prot. 55
 Helenella, *Casey*, Moll. 74
 Hemipterus, *Jacobi*, Ins. 335
 Hemiarcha, *Meyrick*, Ins. 294
 Hemicopsis, *Swinhoe*, Ins. 277
 Hemiglyphyrus, *Champenois*, Ins. 152
 Hemihoplopous, *Birula*, Arachn. 19
 Hemistylus, *Ameghino*, Mamm. 50
 Hemisurcula, *Casey*, Moll. 74
 Hemisyllis, *Verrill*, Verm. 33
 Hemitormus, *Ashmead*, Ins. 229
 Hemixera, *Warren*, Ins. 278
 Hemizaptyx, *Pilsbry*, Moll. 68
 Heptasmicra, *Ashmead*, Ins. 229
 Herdmania, *Ritter*, Tun. 6
 Hermotinus, *Distant*, Ins. 326
 Hesperophantia, *Kirkaldy*, Ins. 332
 Hesperophara, *Kirkaldy*, Ins. 336
 Heteranthessius, *Scott*, Crust. 50
 Heteranthidium, *Cockerell*, Ins. 203
 Hetererannis, *Warren*, Ins. 278
 Heterias, *Richardson*, Crust. 39
 Heterobella, *Turner*, Ins. 288
 Heteroclathria, *Topsent*, Spong. 24
 Heterodictyna, *Dahl*, Arachn. 22
 Heterolambda, *Ameghino*, Mamm. 49
 Heteroleuca, *Warren*, Ins. 278
 Heteromorphysa, *Verrill*, Verm. 33
 Heteronema, *Ulrich and Bassler*, Bry. 16
 Heterotilapia, *Pellegrin*, Pisces 35
 Hexaplex, *Doflein*, Crust. 30
 Hexasmicra, *Ashmead*, Ins. 229
 Hextæus, *Brown*, Ins. 176
 Hicksia, *Delgado*, Crust. 58
 Hilia, *Distant*, Ins. 326
 Himalayites, *Boehm*, Moll. 60
 Himeromima, *Warren*, Ins. 278
 Hirsutopalpis, *Bethune-Baker*, Ins. 259
 Histionotophorus, *Eastman*, Pisces 26
 Holapulus, *Berlese*, Arachn. 42
 Holcopeltoideus, *Ashmead*, Ins. 229
 Holisonycha, *Péringuey*, Ins. 153
 Holochalcis, *Kieffer*, Ins. 229
 Holognathus, *Thomson*, Crust. 41
 Holoscolex, *Cognetti*, Verm. 38
 Holostaspella, *Berlese*, Arachn. 43
 Homalothynnus, *Enderlein*, Ins. 211
 Homocæus, *Jordan*, Ins. 184
 Homolochunia, *Doflein*, Crust. 32
 Homophylotis, *Turner*, Ins. 259
 Homospora, *Turner*, Ins. 278
 Hoplitodes, *Fauvel*, Ins. 136
 Hoplitovalgus, *Kolbe*, Ins. 157
 Hoplolaelaps, *Berlese*, Arachn. 43
 Hoplolontha, *Fairmaire*, Ins. 154
 Hoplomegistus, *Berlese*, Arachn. 43
 Hoplonomia, *Ashmead*, Ins. 203
 Hoploleidnota, *Bates*, Ins. 155
 Hoplopleura, *Enderlein*, Ins. 340
 Horio stomella, *Perner*, Moll. 85
 Hornellia, *Walker*, Crust. 44
 Hubbardiella, *Ashmead*, Ins. 229
 Hugia, *Buckman*, Moll. 60
 Hulecoeteomyia, *Theobald*, Ins. 301
 Huso, *Berg*, Pisces 52
 Hyadaphis, *Kirkaldy*, Ins. 337
 Hyalopola, *Warren*, Ins. 278
 Hyalopsyche, *Ulmer*, Ins. 341
 Hyalorrhœ, *Warren*, Ins. 278
 Hybaphe, *Cook*, Myr. 14
 Hybosericæ, *Péringuey*, Ins. 154
 Hybovalgus, *Kolbe*, Ins. 157
 Hydatoscia, *Warren*, Ins. 278
 Hydrorhoa, *Kieffer*, Ins. 229
 Hylochærus, *Thomas*, Mamm. 44
 Hylopachyiulus, *Attems*, Myr. 15
 Hymenosmithia, *Dalla Torre*, Ins. 208
 Hymetrochota, *Topsent*, Spong. 24
 Hyodectis, *Meyrick*, Ins. 294
 Hypamarygmus, *Gebien*, Ins. 167
 Hypanthidium, *Cockerell*, Ins. 203
 Hyperdidelphys, *Ameghino*, Mamm. 50
 Hyperectis, *Meyrick*, Ins. 288
 Hyphancylus, *Fowler*, Ins. 333
 Hypidota, *Schaus*, Ins. 260
 Hopolepis, *Warren*, Ins. 278
 Hypolophota, *Turner*, Ins. 288
 Hypometalla, *Warren*, Ins. 278
 Hypophylax, *Fairmaire*, Ins. 177
 Hypopteromalus, *Ashmead*, Ins. 229
 Hypozonium, *Cook*, Myr. 12
 Iaspis, *Kaye*, Ins. 249
 Icariastrum, *Dalla Torre*, Ins. 208
 Icarrella, *Dalla Torre*, Ins. 208
 Icariola, *Dalla Torre*, Ins. 208
 Ichnytes, *Vinassa*, Rept. 40

- Idæcamenta, *Péringuey*, Ins. 154
 Idæserica, *Péringuey*, Ins. 154
 Idiophantis, *Meyrick*, Ins. 294
 Idiostoma, *Arrow*, Ins. 151
 Ignacia, *Kirby*, Ins. 356
 Incisura, *Hedley*, Moll. 86
 Indoennea, *Kobelt*, Moll. 62
 Inimicus, *Jordan and Starks*, Pisces 31
 Intranstylum, *Fauré*, Prot. 60
 Ioba, *Distant*, Ins. 330
 Iphiaana, *Dall and Bartsch*, Moll. 83
 Iphiarusa, *Breddie*, Ins. 317
 Iphidioides, *Oudemans*, Arachn. 43
 Iphidiopsis, *Oudemans*, Arachn. 43
 Iphidulus, *Ribaya*, Arachn. 43
 Iropoca, *Turner*, Ins. 260
 Isachisme, *Kirkaldy*, Ins. 322
 Isaphe, *Cook*, Myr. 14
 Iscanus, *Fauvel*, Ins. 167
 Ischnolynthus, *Holmberg*, Ins. 211
 Ischnomembras, *Fowler*, Pisces 41
 Ischnopus, *Marshall*, Ins. 224
 Ischyrocera, *Hauser*, Ins. 157
 Ischyrocyon, *Matthew and Gidley*, Mamm. 37
 Isodiscodes, *Warren*, Ins. 279
 Isomicrus, *Hartmann*, Ins. 177
 Isoniscus, *Borg*, Ins. 354
 Isostigena, *Bethune-Baker*, Ins. 260
 Itaballia, *Kaye*, Ins. 241
 Itamus, *Raffray*, Ins. 142
 Iteticus, *Raffray*, Ins. 142
 Itylus, *Jacoby*, Ins. 193
 Iulota, *Meyrick*, Ins. 294
 Ividia, *Dall and Bartsch*, Moll. 83

 Janetiella, *Berlese*, Arachn. 47
 Jeanella, *Scott*, Crust. 51
 Joppoides, *Berthoumieu*, Ins. 221

 Kalania, *Kirkaldy*, Ins. 324
 Kareol, *Kirkaldy*, Ins. 332
 Karoomys, *Broom*, Mamm. 49
 Kayesia, *Schouteden*, Ins. 317
 Kearfottia, *Fernald*, Ins. 294
 Kelloggia, *Carriker*, Ins. 344
 Kennetus, *Distant*, Ins. 320
 Koebelea, *Ashmead*, Ins. 229
 Koma, *Distant*, Ins. 331
 Kongota, *Distant*, Ins. 331
 Koraia, *Herz*, Ins. 268
 Kosicia, *Brusina*, Moll. 66
 Krambergeria, *Simionescu*, Pisces 38
 Kraseophylla, *Péringuey*, Ins. 154
 Kronides, *Kirkaldy*, Ins. 336

 Laccophorella, *Horváth*, Ins. 317
 Lægula, *Cameron*, Ins. 221
 Lælaspis, *Berlese*, Arachn. 44
 Læogyra, *Perner*, Moll. 82
 Lagium, *Konow*, Ins. 237
 Lahillea, *Loriot*, Echin. 78
 Lamellitettix, *Hancock*, Ins. 360
 Lamprochelidon, *Ridgway*, Aves 54
 Lamprocryptus, *Schmiedeknecht*, Ins. 221
 Lampropepla, *Fairmaire*, Ins. 160
 Lancellia, *Dall and Bartsch*, Moll. 83
 Lanthanomelissa, *Holmberg*, Ins. 203
 Lar, *Semenow*, Ins. 147
 Lasioceros, *Bethune-Baker*, Ins. 260
 Lasiochara, *Bethune-Baker*, Ins. 260
 Lasiocnops, *Theobald*, Ins. 301
 Lasiolimacos, *Bethune-Baker*, Ins. 260
 Laufferia, *Bolívar*, Ins. 360
 Ledomyiella, *Meunier*, Ins. 125
 Leicesteria, *Theobald*, Ins. 301
 Leishmania, *Ross*, Prot. 56
 Lena, *Herz*, Ins. 268
 Lentalius, *Fairmaire*, Ins. 188
 Lentospora, *Plehn*, Prot. 56
 Leobatus, *Walsingham*, Ins. 294
 Leonardiella, *Berlese*, Arachn. 47
 Leontiniella, *Brèthes*, Ins. 208
 Leotichius, *Distant*, Ins. 329
 Lepadichthys, *Waite*, Pisces 27
 Lepchina, *Überthür*, Ins. 253
 Lepidiolamprologus, *Pellegrin*, Pisces 35
 Lepidophthalmus, *Holmes*, Crust. 34
 Lepidophthirus, *Enderlein*, Ins. 340
 Leptalina, *Mabille*, Ins. 251
 Leptea, *Bolívar*, Ins. 360
 Leptergatis, *Holmberg*, Ins. 203
 Leptocallista, *Pilsbry*, Moll. 69
 Leptocebus, *Trouessart*, Mamm. 33
 Leptochalcis, *Kieffer*, Ins. 229
 Leptodella, *Reuter*, Ins. 344
 Leptogeneia, *Meyrick*, Ins. 294
 Leptolabis, *Topsent*, Spong. 25
 Leptometria, *Holmberg*, Ins. 203
 Leptonadata, *Aurivillius*, Ins. 260
 Leptoremus, *Casey*, Ins. 170
 Leptosastra, *Topsent*, Spong. 25
 Leptosurcula, *Casey*, Moll. 74
 Leptotheca, *Fauvel*, Ins. 164
 Leribe, *Péringuey*, Ins. 154
 Lessuerella, *Perner*, Moll. 86
 Leucoctenorrhœ, *Warren*, Ins. 279
 Leucolithodes, *Warren*, Ins. 279
 Leuconotus, *Bruner*, Ins. 360
 Leucoreas, *Warren*, Ins. 279
 Libavius, *Distant*, Ins. 323

- Licaphrops, *Ameghino*, Mamm. 50
 Limifossor, *Heath*, Moll. 91
 Limipecten, *Girty*, Moll. 90
 Limmatoblatta, *Handlirsch*, Ins. 125
 Limnichthys, *Waite*, Pisces 28
 Limnodriloides, *Pierantoni*, Verm.
 38
 Limnopomus, *Dall*, Moll. 79
 Linoceratium, *Bruner*, Ins. 360
 Linshcosteus, *Distant*, Ins. 323
 Liobaulius, *Casey*, Ins. 170
 Liocorida, *Reuter*, Ins. 326
 Liodermion, *Kirkaldy*, Ins. 315
 Lipholidophis, *Mocquard*, Rept. 27
 Lioscarites, *Maindron*, Ins. 130
 Liparophis, *Peracca*, Rept. 27
 Lippomanus, *Distant*, Ins. 324
 Lisitheria, *Cameron*, Ins. 224
 Lithoptera, *Popofsky*, Prot. 52
 Lixomorphus, *Faust*, Ins. 177
 Lobocryptus, *Schmiedeknecht*, Ins.
 221
 Lobopelta, *Schouteden*, Ins. 317
 Lodryca, *Cameron*, Ins. 221
 Logima, *Eaton*, Ins. 302
 Lohmannella, *Neresheimer*, Arachn.
 44
 Lopadoceras, *Buckman*, Moll. 60
 Lophiotoma, *Casey*, Moll. 74
 Lophochorista, *Warren*, Ins. 279
 Lophocodus, *Ameghino*, Mamm. 50
 Lophogododon, *Ameghino*, Mamm.
 50
 Lopholambda, *Ameghino*, Mamm. 49
 Lophomastix, *Benedict*, Crust. 33
 Lophopygia, *Warren*, Ins. 279
 Lophoscelomyia, *Theobald*, Ins. 301
 Lophotosoma, *Warren*, Ins. 279
 Lorichius, *Distant*, Ins. 323
 Loxapicia, *Warren*, Ins. 279
 Loxilobus, *Hancock*, Ins. 360
 Loxiorhiza, *Warren*, Ins. 288
 Luciocyprinus, *Vaillant*, Pisces 48
 Lucitanus, *Distant*, Ins. 327
 Lucrinus, *Cambridge*, Arachn. 29
 Lycastoides, *Johnson*, Verm. 33
 Lycopsylla, *Rothschild*, Ins. 313
 Lymphocystis, *Woodcock*, Prot. 54
 Lynteria, *Cameron*, Ins. 221
 Lyrabela, *Gahan*, Ins. 188
 Lyrolepis, *Romanowky*, Pisces 51
 Lyrosurcula, *Casey*, Moll. 74
 Lysacme, *Dall and Bartsch*, Moll. 83
 Lythrichthys, *Jordan and Starks*,
 Pisces 30
 Macrenches, *Meyrick*, Ins. 294
 Macrolister, *Lewis*, Ins. 146
 Macrorileya, *Ashmead*, Ins. 230
 Macrotona, *Meyrick*, Ins. 294
 Macrovespa, *Dalla Torre*, Ins. 208
 Maculotriton, *Dall*, Moll. 78
 Macusia, *Kaye*, Ins. 250
 Maenas, *Kirkaldy*, Ins. 321
 Mæro, *Cambridge*, Arachn. 25
 Maimon, *Trouessart*, Mamm. 33
 Malacodora, *Bedel*, Ins. 193
 Malalasta, *Distant*, Ins. 327
 Malaza, *Mabille*, Ins. 252
 Maldanopsis, *Verrill*, Verm. 34
 Mamaia, *Stebbing*, Crust. 28
 Mamuchus, *Fairmaire*, Ins. 178
 Manarina, *Mabille*, Ins. 252
 Mantellina, *Sacco*, Moll. 90
 Marbodius, *Distant*, Ins. 323
 Marichisme, *Kirkaldy*, Ins. 319
 Marpelites, *Cameron*, Ins. 221
 Matenesius, *Distant*, Ins. 327
 Matesia, *Lea*, Ins. 178
 Matschiella, *Poche*, Mamm. 48
 Maurachelia, *Bernhauer*, Ins. 136
 Maussenetia, *Cossmann*, Moll. 78
 Meandrella, *Perner*, Moll. 85
 Mecopelidnota, *Bates*, Ins. 156
 Mecynoptera, *Handlirsch*, Ins. 125
 Megablattina, *Sellards*, Ins. 126
 Megacalanus, *Wolfenden*, Crust. 51
 Megacanthopus, *Ducke*, Ins. 208
 Megacentrus, *Szépligeti*, Ins. 224
 Megalonychotherium, *Scott*, Mamm.
 48
 Megapis, *Ashmead*, Ins. 204
 Megapisa, *Aurivillius*, Ins. 261
 Megarhogas, *Szépligeti*, Ins. 225
 Megasurcula, *Casey*, Moll. 75
 Megathericulus, *Ameghino*, Mamm.
 50
 Melanergon, *Bethune-Baker*, Ins. 261
 Melanoscia, *Warren*, Ins. 280
 Melanosmicra, *Ashmead*, Ins. 230
 Melanotettix, *Bruner*, Ins. 361
 Melanthes, *Mabille*, Ins. 252
 Melaphe, *Cook*, Myr. 14
 Menuthias, *Kirkaldy*, Ins. 315
 Mercennus, *Distant*, Ins. 320
 Merogomphus, *Martin*, Ins. 348
 Merriamia, *Boulenger*, Rept. 30
 Mertila, *Distant*, Ins. 327
 Mesedra, *Warren*, Ins. 280
 Mesoagathis, *Cameron*, Ins. 225
 Mesocetus, *Fraas*, Mamm. 47
 Mesocleonus, *Faust*, Ins. 178
 Mesoptylus, *Matsumura*, Ins. 335
 Mesoscolytus, *Brown*, Ins. 182
 Machiloides, *Silvestri*, Ins. 350

- Mesostenopsis, *Schmiedeknecht*, Ins. 221
 Mestor, *Kirkaldy*, Ins. 322
 Metabrixia, *Fowler*, Ins. 333
 Metachatina, *Pilsbry*, Moll. 69
 Metacorthylus, *Blandford*, Ins. 182
 Metacynorta, *Cambridge*, Arachn. 38
 Metandrocarpa, *Michaelsen*, Tun. 6
 Metapogon, *Coquillett*, Ins. 304
 Metavonones, *Cambridge*, Arachn. 38
 Metazaptyx, *Pilsbry*, Moll. 68
 Metazygia, *Cambridge*, Arachn. 29
 Methorius, *Raffray*, Ins. 142
 Metopoxantho, *De Man*, Crust. 29
 Metriorrhynchomiris, *Kirkaldy*, Ins. 324
 Mevianes, *Simon*, Arachn. 32
 Mevius, *Distant*, Ins. 327
 Michaletia, *Cossmann*, Moll. 85
 Micrapis, *Ashmead*, Ins. 204
 Micrixia, *Fowler*, Ins. 333
 Microcentrus, *Szépligeti*, Ins. 225
 Microchalcis, *Kieffer*, Ins. 230
 Microcistela, *Pic*, Ins. 169
 Microcleonus, *Faust*, Ins. 178
 Microcleonus, *Desbrochers*, Ins. 178
 Microgoura, *Rothschild*, Aves 40
 Microlerida, *Fowler*, Ins. 333
 Microlyssa, *Riley*, Aves 51
 Micromasoria, *Kirkaldy*, Ins. 332
 Micropternodus, *Matthew*, Mamm. 36
 Microrutela, *Bates*, Ins. 156
 Microsurcula, *Casey*, Moll. 75
 Microtragulus, *Ameghino*, Mamm. 50
 Milda, *Dall and Bartsch*, Moll. 83
 Milleaster, *Ulrich*, Cœl. 19
 Millinaspis, *Weise*, Ins. 197
 Milocera, *Swinhoe*, Ins. 280
 Mimocellus, *Wasmann*, Ins. 167
 Mimophites, *Fauvel*, Ins. 136
 Mimoprora, *Warren*, Ins. 280
 Miocardiella, *Sacco*, Moll. 89
 Miolabis, *Matthew*, Mamm. 44
 Miopygium, *Breddin*, Ins. 318
 Mirocerus, *Ashmead*, Ins. 230
 Mischosmicra, *Ashmead*, Ins. 230
 Misumessus, *Banks*, Arachn. 31
 Mitona, *Raffray*, Ins. 142
 Molytophilus, *Hartmann*, Ins. 178
 Monandrocarpa, *Michaelsen*, Tun. 7
 Monarea, *Szépligeti*, Ins. 225
 Monocleus, *Jordan*, Ins. 184
 Monogenerina, *Spandel*, Prot. 47
 Monolophus, *Faust*, Ins. 178
 Monoraphis, *Schulze*, Spong. 14
 Monostiolum, *Dall*, Moll. 78
 Monroa, *Warren*, Ins. 281
 Montandoneus, *Kirkaldy*, Ins. 315
 Montandoniella, *Schouteden*, Ins. 318
 Mormoniella, *Ashmead*, Ins. 230
 Morokasia, *Jacoby*, Ins. 194
 Morphomima, *Warren*, Ins. 281
 Morphotropis, *Perner*, Moll. 79
 Moschophoromys, *Trouessart*, Mamm. 40
 Muanza, *Distant*, Ins. 331
 Munza, *Distant*, Ins. 331
 Mycernus, *Brown*, Ins. 154
 Mycterocoris, *Uhler*, Ins. 327
 Myenchus, *Schuberg*, Verm. 53
 Mylantria, *Aurivillius*, Ins. 261
 Myolestes, *Brèthes*, Ins. 305
 Myonyssus, *Tiraboschi*, Arachn. 45
 Myriopora, *Volz*, Cœl. 19
 Myrmecoleichus, *Berlese*, Arachn. 45
 Myrmonissus, *Berlese*, Arachn. 45
 Myrsinus, *Gahan*, Ins. 188
 Mysolis, *Kirkaldy*, Ins. 336
 Mystilus, *Distant*, Ins. 327
 Nakadaella, *Ancey*, Moll. 81
 Nalanda, *Théry*, Ins. 160
 Nanichisme, *Kirkaldy*, Ins. 319
 Nanniella, *Reuter*, Ins. 327
 Nannoalgus, *Kolbe*, Ins. 157
 Nanochromis, *Pellegrin*, Pisces 35
 Narcegaster, *Horvath*, Ins. 321
 Nasonia, *Ashmead*, Ins. 230
 Nathorstites, *Böhm*, Moll. 60
 Naticonema, *Perner*, Moll. 82
 Nebaliella, *Thiele*, Crust. 47
 Nectarodicta, *Holmberg*, Ins. 204
 Nematrochus, *Perner*, Moll. 85
 Nemoxenus, *Faust*, Ins. 178
 Nenemeca, *Raffray*, Ins. 142
 Neobapta, *Warren*, Ins. 281
 Neocatolaccus, *Ashmead*, Ins. 230
 Neodezia, *Warren*, Ins. 281
 Neodirades, *Warren*, Ins. 281
 Neofidonia, *Warren*, Ins. 281
 Neohalictoides, *Viereck*, Ins. 204
 Neohirasea, *Rehn*, Ins. 356
 Neolucia, *Waterhouse and Turner*, Ins. 250
 Neomermis, *Linstow*, Verm. 53
 Neomesostenus, *Schmiedeknecht*, Ins. 221
 Neomicrorbis, *Rovereto*, Verm. 34
 Neonematherium, *Ameghino*, Mamm. 50
 Neonemoria, *Warren*, Ins. 281
 Neopangasius, *Popta*, Pisces 46
 Neoplema, *Warren*, Ins. 281

- Neopolita, *Warren*, Ins. 281
 Neorileya, *Ashmead*, Ins. 230
 Neosconella, *Cambridge*, Arachn. 29
 Neoseius, *Oudemans*, Arachn. 45
 Neosyagrius, *Lea*, Ins. 178
 Neotaxia, *Dognin*, Ins. 281
 Nephrocoria, *Stichel*, Ins. 246
 Nerissella, *Jacoby*, Ins. 194
 Nervicompresa, *Bethune-Baker*, Ins. 261
 Nesiophædusa, *Pilsbry*, Moll. 68
 Nesohippus, *Ameghino*, Mamm. 49
 Nesolycaena, *Waterhouse and Turner*, Ins. 250
 Nesomyia, *Ashmead*, Ins. 230
 Nezumia, *Jordan and Starks*, Pisces 40
 Nicholsonia, *Bogatirew*, Cœl. 30
 Nichomachus, *Distant*, Ins. 327
 Nicostratus, *Distant*, Ins. 327
 Niphoparmena, *Aurivillius*, Ins. 188
 Nipponites, *Yabe*, Moll. 60
 Nodulina, *Raffray*, Ins. 142
 Nomimonyx, *Faust*, Ins. 178
 Notamphicyon, *Ameghino*, Mamm. 50
 Notanisomorpha, *Ashmead*, Ins. 230
 Nothamusium, *Hind*, Moll. 90
 Notochampsia, *Broom*, Rept. 29
 Notoprotogonia, *Ameghino*, Mamm. 49
 Nyctereutica, *Turner*, Ins. 289
 Nycterorhinus, *Fairmaire*, Ins. 179
 Nyctibates, *Boulenger*, Rept. 36
 Nyctidea, *Reuter*, Ins. 327
 Nymannus, *Distant*, Ins. 328

 Ochisme, *Kirkaldy*, Ins. 315
 Ochleroptera, *Holmberg*, Ins. 212
 Ochrophlegma, *Bolívar*, Ins. 361
 Ochrorrhaca, *Bredden*, Ins. 318
 Ochrotettix, *Bruner*, Ins. 361
 Ocosia, *Jordan and Starks*, Pisces 31
 Octomitus, *Prowazek*, Prot. 57
 Octomyodon, *Ameghino*, Mamm. 51
 Octosmicra, *Ashmead*, Ins. 230
 Ocyglossa, *Giard*, Prot. 57
 Ocynectes, *Jordan and Starks*, Pisces 29
 Odontogonus, *Bergroth*, Ins. 323
 Odontopsalis, *Burr*, Ins. 353
 Odontothynnus, *Cameron*, Ins. 212
 Odontotrupes, *Boucomont*, Ins. 151
 Oedalechilus, *Fowler*, Pisces 41
 Edaloneura, *Mabille*, Ins. 252
 Edania, *Buckman*, Moll. 61

 Emida, *Gahan*, Ins. 188
 Emodana, *Gahan*, Ins. 188
 Enides, *Mabille*, Ins. 252
 Enomys, *Thomas*, Mamm. 40
 Ogovia, *Hansen and Sorensen*, Arachn. 37
 Ogulnia, *Cameron*, Ins. 221
 Olibophthalmus, *Simon*, Arachn. 32
 Oligozaptyx, *Pilsbry*, Moll. 68
 Olindioides, *Goto*, Cœl. 20
 Ollia, *Dyar*, Ins. 289
 Ololaelaps, *Berlese*, Arachn. 45
 Omotimus, *Raffray*, Ins. 142
 Onchodellus, *Berlese*, Arachn. 46
 Oncinoproctus, *Bredden*, Ins. 318
 Oncochalcis, *Cameron*, Ins. 230
 Oncotophasma, *Rehn*, Ins. 356
 Oneilella, *Cameron*, Ins. 222
 Onomaus, *Distant*, Ins. 328
 Onychelus, *Cook*, Myr. 16
 Onycocaris, *Nobili*, Crust. 36
 Oocamenta, *Péringuey*, Ins. 154
 Oophædusa, *Pilsbry*, Moll. 68
 Ophelius, *Raffray*, Ins. 142
 Ophiochrysis, *Koehler*, Echin. 83
 Ophiocirce, *Koehler*, Echin. 83
 Ophiocrates, *Koehler*, Echin. 84
 Ophiodoris, *Koehler*, Echin. 84
 Ophiolutece, *Koehler*, Echin. 84
 Ophiomidas, *Koehler*, Echin. 85
 Ophiomoeris, *Koehler*, Echin. 85
 Ophiomytis, *Koehler*, Echin. 85
 Ophiononeura, *Cameron*, Ins. 222
 Ophiopallas, *Koehler*, Echin. 85
 Ophrygonius, *Zang*, Ins. 149
 Ophthalmotilapia, *Pellegrin*, Pisces 35
 Opisthoctenodon, *Broom*, Rept. 33
 Opisthodiscus, *Cohn*, Verm. 49
 Orbignyella, *Ulrich and Bassler*, Bry. 12
 Oreohelix, *Pilsbry*, Moll. 66
 Oreonoma, *Warren*, Ins. 281
 Oreophaetes, *Rehn*, Ins. 356
 Oreovalgus, *Kolbe*, Ins. 158
 Oria, *Distant*, Ins. 331
 Origenes, *Marshall*, Ins. 179
 Orinella, *Dall and Bartsch*, Moll. 83
 Ornicholax, *Carriker*, Ins. 345
 Ornithissus, *Fowler*, Ins. 333
 Oroacrodon, *Ameghino*, Mamm. 49
 Orthoarthrus, *Ameghino*, Mamm. 50
 Orthochalcis, *Kieffer*, Ins. 230
 Orthonecroscia, *Kirby*, Ins. 356
 Orthopodomys, *Theobald*, Ins. 301
 Orthoptila, *Meyrick*, Ins. 295
 Orthosurecula, *Casey*, Moll. 75

- Orthotropis*, *Jordan*, Ins. 185
Oslaria, *Dyar*, Ins. 269
Osmanoceras, *Kittl*, Moll. 61
Ostiolum, *Pratt*, Verm. 49
Ostrodias, *Distant*, Ins. 324
Otospira, *Perner*, Moll. 82
Otouphepus, *Cushman*, Rept. 29
Ouranion, *Kirkaldy*, Ins. 319
Oxycordyla, *Topsent*, Spong. 21
Oxycoryphus, *Cameron*, Ins. 230
Oxydactylus, *Peterson*, Mamm. 44
Oxyopsis, *Caudell*, Ins. 355
Oxytoxia, *Mabille*, Ins. 252
- Pachycerianthus*, *Roule*, Coel. 32
Pachycrepoideus, *Ashmead*, Ins. 230
Pachylister, *Lewis*, Ins. 146
Pachynasua, *Ameghino*, Mamm. 50
Pachyntheisa, *Fowler*, Ins. 333
Pachystrophia, *Perner*, Moll. 80
Pachytragus, *Schlosser*, Mamm. 43
Pacificana, *Hogg*, Arachn. 32
Pædiovalgus, *Kölbe*, Ins. 158
Pagodea, *Perner*, Moll. 85
Paineia, *Buckman*, Moll. 61
Païta, *Fauvel*, Ins. 167
Paiwarria, *Kaye*, Ins. 250
Palæochamæleo, *De Stefano*, Rept. 25
Palæocolpodia, *Meunier*, Ins. 124
Palæognoriste, *Meunier*, Ins. 125
Palæoheteromyza, *Meunier*, Ins. 125
Palæoheterotracha, *Meunier*, Ins. 125
Palæomantis, *Handlirsch*, Ins. 125
Palæomastax, *Handlirsch*, Ins. 126
Palæonustus, *Perner*, Moll. 82
Palæopalara, *Handlirsch*, Ins. 125
Palæorhinus, *Williston*, Rept. 32
Palorthopteron, *Handlirsch*, Ins. 126
Panaphis, *Kirkaldy*, Ins. 337
Pancenia, *Meyrick*, Ins. 295
Panilurus, *Jacoby*, Ins. 194
Paniscomima, *Enderlein*, Ins. 212
Papagoa, *Bruner*, Ins. 361
Parabæra, *Dognin*, Ins. 289
Parabasis, *Bethune-Baker*, Ins. 269
Parabolbocoris, *Schouteden*, Ins. 318
Paracamenta, *Péringuey*, Ins. 154
Paraceryx, *Bethune-Baker*, Ins. 262
Parachetolyga, *Bischof*, Ins. 309
Parachleabata, *Bruner*, Ins. 361
Parachrysops, *Bethune-Baker*, Ins. 250
Paraclemensia, *Busck*, Ins. 295
Paracælodus, *Ameghino*, Mamm. 49
Paracoleotichus, *Schouteden*, Ins. 318
Paracomucha, *Warren*, Ins. 282
- Paracrias*, *Ashmead*, Ins. 230
Paracrossochilus, *Popta*, Pisces 48
Paractenodia, *Péringuey*, Ins. 171
Paradiastylis, *Calman*, Crust. 39
Paradidelpheys, *Ameghino*, Mamm. 50
Paradohertya, *Bethune-Baker*, Ins. 262
Paradoxodes, *Warren*, Ins. 282
Paradoxorhyncha, *Chapman*, Crust. 54
Paragambusia, *Meek*, Pisces 43
Parahyænodon, *Ameghino*, Mamm. 50
Paralagena, *Dall*, Moll. 78
Paraleptynia, *Caudell*, Ins. 356
Paraleucocelis, *Preiss*, Ins. 158
Paraliocercyon, *Ganglbauer*, Ins. 133
Paralixus, *Csiki*, Ins. 179
Paralucia, *Waterhouse and Turner*, Ins. 250
Paramusonia, *Rehn*, Ins. 355
Paramyocastor, *Ameghino*, Mamm. 50
Paramyxine, *Dean*, Pisces 57
Paranauchenia, *Ameghino*, Mamm. 50
Paranotropis, *Fowler*, Pisces 48
Parantheopsis, *McMurrich*, Coel. 32
Paranthribus, *Jordan*, Ins. 185
Parapantilius, *Reuter*, Ins. 328
Parapelopides, *Zang*, Ins. 149
Parapenæon, *Richardson*, Crust. 42
Paraphnæus, *Thierry-Mieg*, Ins. 250
Paraplesius, *Hartmann*, Ins. 179
Paraplodes, *Warren*, Ins. 282
Parapœcilocoris, *Schouteden*, Ins. 318
Parapœcilophila, *Hauser*, Ins. 158
Parapteromalus, *Ashmead*, Ins. 230
Paraptorthodius, *Schaeffer*, Ins. 163
Paracrottherium, *Ameghino*, Mamm. 50
Parasaphes, *Ashmead*, Ins. 230
Paraschizognathus, *Ohaus*, Ins. 156
Parascina, *Stebbing*, Crust. 46
Parascutigera, *Verhoeff*, Myr. 9
Parasiro, *Hansen and Sorensen*, Arachn. 37
Paraspalangia, *Ashmead*, Ins. 230
Parasteiromys, *Ameghino*, Mamm. 50
Paratapisirus, *Depéret and Douxami*, Mamm. 45
Parategastes, *Sars*, Crust. 51
Paratemnus, *Ameghino*, Mamm. 50
Paraterobia, *Ashmead*, Ins. 230
Paraugaptilus, *Wolfenden*, Crust. 51
Paraulax, *Kieffer*, Ins. 235
Paravonones, *Cambridge*, Arachn. 38

- Parawixia, *Cambridge*, Arachn. 30
 Parazaptyx, *Pilsbry*, Moll. 68
 Parazeuzera, *Bethune-Baker*, Ins. 262
 Parelodina, *Bethune-Baker*, Ins. 250
 Parexillis, *Jordan*, Ins. 185
 Parocalea, *Bernhauer*, Ins. 137
 Parochlerus, *Breddin*, Ins. 318
 Parochthiphila, *Czerny*, Ins. 311
 Parocyusa, *Bernhauer*, Ins. 137
 Paromala, *Warren*, Ins. 282
 Paronesimus, *Stebbing*, Crust. 45
 Paronipora, *Capeder*, Cœl. 32
 Parosorius, *Bernhauer*, Ins. 137
 Parourapteryx, *Thierry-Mieg*, Ins. 282
 Parvanemus, *Mayer*, Cœl. 20
 Parviterebra, *Pilsbry*, Moll. 75
 Parvochlamys, *Sacco*, Moll. 90
 Pasaphylla, *Péringuey*, Ins. 154
 Patreus, *Raffray*, Ins. 142
 Pauluccia, *Brusina*, Moll. 79
 Paumomua, *Jacoby*, Ins. 194
 Pauropsalta, *Goding and Froggatt*, Ins. 331
 Peggichisme, *Kirkaldy*, Ins. 320
 Pegylidius, *Péringuey*, Ins. 154
 Pelorotelus, *Ashmead*, Ins. 230
 Penardia, *Cash*, Prot. 43
 Pentalagus, *Lyon*, Mamm. 42
 Pentanodes, *Schaeffer*, Ins. 188
 Pentanymphon, *Hodgson*, Crust. 61
 Pentasmicra, *Ashmead*, Ins. 231
 Pentatropis, *Faust*, Ins. 179
 Pentias, *Richardson*, Crust. 41
 Peradorcas, *Thomas*, Mamm. 48
 Peratodonta, *Aurivillius*, Ins. 262
 Peregrinator, *Kirkaldy*, Ins. 322
 Peregrinus, *Kirkaldy*, Ins. 333
 Perhippidion, *Ameghino*, Mamm. 49
 Periacrodon, *Ameghino*, Mamm. 49
 Peribolodes, *Warren*, Ins. 282
 Pericamenta, *Péringuey*, Ins. 154
 Periphymopsis, *Schouteden*, Ins. 318
 Peritragus, *Aurivillius*, Ins. 188
 Peronodoris, *Bergh*, Moll. 72
 Phænacantha, *Horváth*, Ins. 321
 Phænopharos, *Kirby*, Ins. 356
 Phaneroturis, *Bruner*, Ins. 361
 Phanerozonida, *Delage*, Echin. 79
 Phanophilus, *Ameghino*, Mamm. 49
 Phanosolena, *Schaeffer*, Ins. 185
 Pharyllus, *Distant*, Ins. 328
 Phasmatocoris, *Breddin*, Ins. 323
 Phaulocylliba, *Berlese*, Arachn. 46
 Phaulodinychus, *Berlese*, Arachn. 46
 Phaulosis, *Weise*, Ins. 194
 Phaulosomus, *Faust*, Ins. 179
 Pheidoloxenus, *Ashmead*, Ins. 231
 Philas, *Portevin*, Ins. 145
 Philodromoides, *Scheffer*, Arachn. 31
 Philosepedon, *Eaton*, Ins. 302
 Philosyrtris, *Giard*, Verm. 56
 Phlebosphales, *Warren*, Ins. 282
 Phlæograptis, *Meyrick*, Ins. 295
 Phlyctænopora, *Topsent*, Spong. 25
 Phoberus, *Raffray*, Ins. 143
 Phoenixauchenia, *Ameghino*, Mamm. 50
 Pholeoteris, *Sturany*, Moll. 68
 Phoxargyrea, *Fowler*, Pisces 41
 Phrygiomurex, *Dall*, Moll. 78
 Phthartus, *Handlirsch*, Ins. 125
 Phthirocoris, *Distant*, Ins. 324
 Phyllochisme, *Kirkaldy*, Ins. 321
 Phyllolonche, *Popofsky*, Prot. 52
 Physalidonotus, *Ehlers*, Verm. 35
 Physalozircon, *Berlese*, Arachn. 46
 Physoglenes, *Simon*, Arachn. 23
 Phyteumas, *Bolívar*, Ins. 361
 Phytoseius, *Ribaya*, Arachn. 46
 Pietteia, *Cossmann*, Moll. 78
 Piezonemus, *Jordan*, Ins. 185
 Pilchenia, *Ameghino*, Mamm. 50
 Pilematechinus, *Agassiz*, Echin. 68
 Pionaces, *Simon*, Arachn. 32
 Pipetta, *Loman*, Crust. 61
 Piptocentrus, *Horváth*, Ins. 321
 Pistosia, *Weise*, Ins. 197
 Placerias, *Lucas*, Rept. 33
 Planitrochus, *Perner*, Moll. 85
 Platehippius, *Navás*, Ins. 361
 Platylistrum, *Schulze*, Spong. 14
 Platysphyrus, *Sloane*, Ins. 131
 Plectonotus, *Clarke*, Moll. 86
 Pleiophylla, *Péringuey*, Ins. 154
 Pleistophylla, *Péringuey*, Ins. 154
 Plerisca, *Bolívar*, Ins. 361
 Plesioctenodes, *Ashmead*, Ins. 231
 Pleurolopha, *Turner*, Ins. 282
 Pleuromphalus, *Perner*, Moll. 80
 Pleurophorella, *Girty*, Moll. 87
 Pleuroxonotus, *Reuter*, Ins. 328
 Plexotemnus, *Ameghino*, Mamm. 50
 Pliotropis, *Kobelt*, Moll. 63
 Plocamiopsis, *Topsent*, Spong. 25
 Ploconema, *Perner*, Moll. 85
 Plocovalgus, *Kolbe*, Ins. 158
 Pœcilochlora, *Warren*, Ins. 282
 Pœcilolagus, *Lyon*, Mamm. 42
 Pogonocæbus, *Trouessart*, Mamm. 33
 Polistella, *Ashmead*, Ins. 208
 Polistoides, *Dalla Torre*, Ins. 209
 Polyandrocarpa, *Michaelsen*, Tun. 7
 Polychelus, *Luze*, Ins. 138
 Polychisme, *Kirkaldy*, Ins. 320
 Polychnomia, *Bischof*, Ins. 309

- Polymniella, *Verrill*, Verm. 32
 Polyniphes, *Kaye*, Ins. 250
 Polyplax, *Enderlein*, Ins. 340
 Polystylops, *Ameghino*, Mamm. 50
 Pomponatus, *Distant*, Ins. 320
 Pontogammarus, *Sowinsky*, Crust. 45
 Poppia, *Konow*, Ins. 237
 Poricella, *Canu*, Bry. 15
 Poronotellus, *Kirkaldy*, Ins. 324
 Porteria, *Simon*, Arachn. 32
 Poultonia, *Neave*, Ins. 250
 Pparchus, *Brown*, Ins. 180
 Prepothierops, *Ameghino*, Mamm. 50
 Presbole, *Handlirsch*, Ins. 125
 Prionolixus, *Desbrochers*, Ins. 180
 Priperia, *Simon*, Arachn. 30
 Proactica, *Walsingham*, Ins. 295
 Proarctotherium, *Ameghino*, Mamm. 50
 Probænia, *Weise*, Ins. 197
 Probergrothius, *Kirkaldy*, Ins. 320
 Procatopus, *Boulenger*, Pisces 42
 Prodamaliscus, *Schlosser*, Mamm. 43
 Prodecatoma, *Ashmead*, Ins. 231
 Prodicynodon, *Broom*, Rept. 33
 Prodontria, *Brown*, Ins. 154
 Prodosiarcha, *Meyrick*, Ins. 295
 Prodomus, *Distant*, Ins. 328
 Proctocion, *Ameghino*, Mamm. 50
 Progalaëopithecus, *Ameghino*, Mamm. 49
 Progarzonina, *Ameghino*, Mamm. 50
 Progonopteryx, *Handlirsch*, Ins. 125
 Promacrauchenia, *Ameghino*, Mamm. 50
 Promioclenus, *Trouessart*, Mamm. 38
 Promyrmephagus, *Ameghino*, Mamm. 50
 Pronolagus, *Lyon*, Mamm. 42
 Pronopharynx, *Cohn*, Verm. 50
 Pronycticebus, *Trouessart*, Mamm. 34
 Propantostylops, *Ameghino*, Mamm. 50
 Proplatygaster, *Kieffer*, Ins. 234
 Propreoptherium, *Ameghino*, Mamm. 50
 Prorocrania, *Turner*, Ins. 283
 Prosagola, *Raffray*, Ins. 143
 Proscyllium, *Hilgendorf*, Pisces 55
 Prosolarium, *Perner*, Moll. 80
 Prospaltella, *Ashmead*, Ins. 231
 Prosthenops, *Matthew and Gidley*, Mamm. 44
 Prostoma, *Warren*, Ins. 283
 Protamandua, *Ameghino*, Mamm. 50
 Protapoica, *Dalla Torre*, Ins. 209
 Proteinissus, *Fowler*, Ins. 334
 Proteriades, *Titus*, Ins. 205
 Proterix, *Matthew*, Mamm. 36
 Protobalanus, *Cavallery and Mesnil*, Verm. 57
 Protocallidium, *Csiki*, Ins. 189
 Protocetus, *Fraas*, Mamm. 47
 Protocryptus, *Schmiedeknecht*, Ins. 222
 Protoculex, *Felt*, Ins. 301
 Protodiscoelium, *Dalla Torre*, Ins. 209
 Prototechia, *Meyrick*, Ins. 295
 Protomacronema, *Ulmer*, Ins. 342
 Protopalpythoa, *Verrill*, Cœl. 33
 Protosiren, *Abel*, Mamm. 47
 Protosurcula, *Casey*, Moll. 75
 Protothelpus, *Verrill*, Verm. 35
 Protrachysaurus, *De Stefano*, Rept. 25
 Proutista, *Kirkaldy*, Ins. 332
 Provola, *Swinhoe*, Ins. 283
 Pselaphelia, *Aurivillius*, Ins. 263
 Pselliophora, *Verhoeff*, Myr. 9
 Pseudachloa, *Péringuey*, Ins. 154
 Pseudætideus, *Wolfenden*, Crust. 52
 Pseudasellodes, *Warren*, Ins. 283
 Pseudelma, *Kobelt*, Moll. 62
 Pseudeurina, *de Meijere*, Ins. 311
 Pseudilema, *Bethune-Baker*, Ins. 263
 Pseudobracon, *Szépligeti*, Ins. 225
 Pseudobradya, *Sars*, Crust. 52
 Pseudocamenta, *Péringuey*, Ins. 154
 Pseudochæta, *Kirby*, Ins. 355
 Pseudocrociniis, *Swinhoe*, Ins. 283
 Pseudocucullæa, *Solger*, Moll. 91
 Pseudodreata, *Bethune-Baker*, Ins. 263
 Pseudofeltria, *Soar*, Arachn. 46
 Pseudogargetta, *Bethune-Baker*, Ins. 263
 Pseudohelicoptera, *Fowler*, Ins. 334
 Pseudolabis, *Matthew*, Mamm. 44
 Pseudolacerta, *De Stefano*, Rept. 25
 Pseudomasareus, *Desbrochers*, Ins. 131
 Pseudomimus, *Hartmann*, Ins. 180
 Pseudopedaria, *Felsche*, Ins. 152
 Pseudopercis, *Miranda Ribeiro*, Pisces 38
 Pseudoryxa, *Schmidt*, Ins. 335
 Pseudosalius, *Ashmead*, Ins. 213
 Pseudosastra, *Jacoby*, Ins. 195
 Pseudoschizognathus, *Ohaus*, Ins. 156

- Pseudostromborrhinus*, *Heller*, Ins. 180
Pseudotectus, *Perner*, Moll. 85
Pseudotragus, *Schlosser*, Mamm. 43
Pseudotruncatella, *Andreae*, Moll. 81
Pseudotylostoma, *Ihering*, Moll. 82
Pseudotypotherium, *Ameghino*, Mamm. 49
Pseustophylla, *Péringuey*, Ins. 154
Psilochalcis, *Kieffer*, Ins. 231
Psilocochlis, *Dall*, Moll. 77
Psilotrichus, *Luze*, Ins. 138
Psodopsis, *Warren*, Ins. 283
Psoralis, *Mabille*, Ins. 252
Psorosina, *Dyar*, Ins. 289
Psychophagus, *Mayr*, Ins. 231
Pteroceropsis, *Swinkoe*, Ins. 263
Pterygascidia, *Sluiter*, Tun. 7
Ptilogonia, *Bischof*, Ins. 309
Ptilophyllodromia, *Bezzi*, Ins. 306
Ptomatis, *Clarke*, Moll. 86
Ptychocladia, *Ulrich and Bassler*, Bry. 17
Ptychocynodon, *Seeley*, Rept. 33
Ptychonema, *Perner*, Moll. 82
Ptychorhytida, *Kobelt*, Moll. 62
Purcellia, *Hansen and Sorensen*, Arachn. 37
Pycnomma, *Rutter*, Pisces 32
Pycnomutilla, *Ashmead*, Ins. 213
Pycnotrochus, *Perner*, Moll. 85
Pygæomorpha, *Bethune-Baker*, Ins. 263
Pyralophodon, *Ameghino*, Mamm. 50
Pyrrochalcia, *Mabille*, Ins. 252

Quadrimetron, *Popofsky*, Prot. 52
Quadrinervus, *Cossmann*, Moll. 78
Quadristaurus, *Popofsky*, Prot. 52
Quercetanus, *Distant*, Ins. 323

Radamellus, *Raffray*, Ins. 143
Ragnar, *Kirkaldy*, Ins. 324
Ramella, *Schulze*, Spong. 17
Raphidocystis, *Penard*, Prot. 50
Rathymotherium, *Ameghino*, Mamm. 50
Reedia, *Ashmead*, Ins. 213
Regania, *Jordan and Starks*, Pisces 40
Rekoa, *Kaye*, Ins. 250
Renicola, *Cohn*, Verm. 50
Renifer, *Pratt*, Verm. 50
Reuterista, *Kirkaldy*, Ins. 324
Rhabdochæta, *de Meijere*, Ins. 311

Rhabdoploca, *Topsent*, Spong. 25
Rhabdospira, *Perner*, Moll. 80
Rhacocassis, *Spaeth*, Ins. 198
Rhamphixius, *Fowler*, Ins. 334
Rheopresbe, *Jordan and Starks*, Pisces 29
Rhinura, *Warren*, Ins. 284
Rhodanomys, *Depéret and Douxami*, Mamm. 41
Rhomena, *Warren*, Ins. 284
Rhombotrypa, *Ulrich and Bassler*, Bry. 13
Rhopalithes, *Grabau*, Moll. 77
Rhynchomesostoma, *Luther*, Verm. 44
Rhynchophalera, *Aurivillius*, Ins. 263
Rhypastus, *Fairmaire*, Ins. 180
Ricuzenius, *Jordan and Starks*, Pisces 29
Rihana, *Distant*, Ins. 331
Robertsonella, *Titus*, Ins. 206
Ropaliceschatus, *Reuter*, Ins. 328
Rosetta, *Popofsky*, Prot. 52
Rotellomphalus, *Perner*, Moll. 85
Rozinante, *Stebbing*, Crust. 45
Rulandus, *Distant*, Ins. 323
Ruscula, *Casey*, Moll. 75

Sabellicus, *Distant*, Ins. 328
Sabljaria, *Brusina*, Moll. 66
Saccocina, *Dall and Bartsch*, Moll. 84
Saccoploca, *Warren*, Ins. 284
Sadaka, *Distant*, Ins. 331
Salagosa, *Raffray*, Ins. 143
Saprus, *Blackburn*, Ins. 152
Sarcoborus, *Oudemans*, Arachn. 46
Sarega, *Mabille*, Ins. 252
Sargocentron, *Fowler*, Pisces 39
Sarisophora, *Meyrick*, Ins. 296
Sarostegia, *Topsent*, Spong. 17
Sarotorna, *Meyrick*, Ins. 296
Saycia, *Sars*, Crust. 49
Sayiella, *Ashmead*, Ins. 231
Scapanodon, *Broom*, Rept. 32
Scaptocosa, *Banks*, Arachn. 35
Scaridea, *Jenkins*, Pisces 34
Scelidotheriops, *Ameghino*, Mamm. 51
Scenidiopis, *Turner*, Ins. 290
Sclerothamnopsis, *Wilson*, Spong. 16
Schizanoplius, *Cameron*, Ins. 213
Schizoblattina, *Sellards*, Ins. 126
Schizochirus, *Waite*, Pisces 28
Schizocosa, *Chamberlin*, Arachn. 35
Schlettereriella, *Szépligeti*, Ins. 225

- Schmidtia, *Jordan and Starks*,
 Pisces 29
 Schmittina, *Jordan and Starks*,
 Pisces 29
 Schonlandella, *Cameron*, Ins. 225
 Schuchertella, *Girty*, Brach. 7
 Schwarzella, *Ashmead*, Ins. 231
 Sciaphobus, *Daniel*, Ins. 180
 Sciarella, *Meunier*, Ins. 125
 Scirtetica, *Holmberg*, Ins. 206
 Sclerodoris, *Eliot*, Moll. 72
 Scotocyma, *Warren*, Ins. 284
 Scotophilus, *Hartmann*, Ins. 180
 Scotolinx, *Ashmead*, Ins. 231
 Scutigerides, *Silvestri*, Myr. 9
 Scutigerina, *Silvestri*, Myr. 10
 Scutomysia, *Theobald*, Ins. 301
 Scutops, *Coquillett*, Ins. 311
 Scymnophagus, *Ashmead*, Ins. 231
 Scymnopsis, *Jordan*, Ins. 185
 Scytinoptera, *Handlirsch*, Ins. 125
 Scytoglossa, *Luze*, Ins. 138
 Sebaia, *Oudemans*, Arachn. 47
 Sebakue, *Péringuey*, Ins. 155
 Sebastiscus, *Jordan and Starks*,
 Pisces 30
 Segestriella, *Purcell*, Arachn. 23
 Seguenziella, *Sacco*, Moll. 80
 Selenechinus, *de Meijere*, Echin. 72
 Sellinema, *Perner*, Moll. 85
 Semnosia, *Daniel*, Ins. 189
 Sepidiocoris, *Schouteden*, Ins. 319
 Serapista, *Cockerell*, Ins. 206
 Serdis, *Mabille*, Ins. 252
 Seridentus, *Osborn*, Ins. 323
 Serpho, *Hutton*, Moll. 64
 Sellius, *Distant*, Ins. 324
 Severinina, *Schouteden*, Ins. 319
 Seymouria, *Broili*, Rept. 33
 Shalisha, *Cameron*, Ins. 222
 Siderus, *Kaye*, Ins. 250
 Siebenrockia, *Poche*, Rept. 27
 Siettitia, *Abeille*, Ins. 133
 Sigmomys, *Ameghino*, Mamm. 50
 Silphosoma, *Portevin*, Ins. 145
 Silvestrina, *Prever*, Prot. 49
 Silvitettix, *Bruner*, Ins. 362
 Simplimus, *Ameghino*, Mamm. 50
 Sinoennea, *Kobelt*, Moll. 62
 Sinophthalmus, *Coquillett*, Ins. 311
 Sinutropis, *Perner*, Moll. 80
 Sisantum, *Bruner*, Ins. 362
 Slossonella, *Dyar*, Ins. 264
 Smenodoca, *Meyrick*, Ins. 296
 Sminthocoris, *Distant*, Ins. 324
 Snowiellus, *Hine*, Ins. 303
 Socarnella, *Walker*, Crust. 45
 Socnopæa, *Stromer*, Pisces 46
 Solenispa, *Weise*, Ins. 198
 Solenopotes, *Enderlein*, Ins. 340
 Somatoxena, *Aurivillius*, Ins. 264
 Sophianus, *Distant*, Ins. 328
 Sophraenella, *Jacoby*, Ins. 195
 Sorecocephala, *Bernhauer*, Ins. 138
 Southia, *Kirkaldy*, Ins. 332
 Spathopus, *Ashmead*, Ins. 231
 Spatularia, *van Deventer*, Ins. 296
 Sphæractinomyxon, *Caullery and Mesnil*, Prot. 56
 Sphærolælaps, *Berlese*, Arachn. 47
 Sphæromimonectes, *Woltereck*,
 Crust. 46
 Sphæronellopsis, *Hansen*, Crust. 52
 Sphæroseius, *Berlese*, Arachn. 47
 Sphaleractis, *Meyrick*, Ins. 296
 Sphenalia, *Daniel*, Ins. 189
 Sphendononema, *Verhoeff*, Myr. 10
 Sphingmocephalus, *Enderlein*, Ins.
 324
 Sphinctovalgus, *Kolbe*, Ins. 158
 Sphinta, *Schaus*, Ins. 264
 Spilojoppa, *Cameron*, Ins. 222
 Spilopimpla, *Cameron*, Ins. 222
 Spilovalgus, *Kolbe*, Ins. 158
 Spiticeras, *Uhlig*, Moll. 61
 Sporostigena, *Bethune-Baker*, Ins.
 264
 Squamosala, *Bethune-Baker*, Ins. 264
 Stælonchodes, *Kirby*, Ins. 357
 Stantonina, *Ashmead*, Ins. 225
 Stauronereis, *Verrill*, Verm. 36
 Stegasta, *Meyrick*, Ins. 296
 Stegias, *Richardson*, Crust. 42
 Stegius, *Distant*, Ins. 324
 Stellacantha, *Popofsky*, Prot. 52
 Stellolonche, *Popofsky*, Prot. 52
 Stelodoryx, *Topsent*, Spong. 25
 Stenolandra, *Fairmaire*, Ins. 181
 Stenomesioidea, *Ashmead*, Ins. 231
 Stenonyx, *Lull*, Rept. 29
 Stereotoxodon, *Ameghino*, Mamm.
 49
 Sthenobela, *Turner*, Ins. 290
 Stictocoris, *Kirkaldy*, Ins. 315
 Stigmatella, *Ulrich and Bassler*,
 Bry. 13
 Stigmatocrepis, *Ashmead*, Ins. 232
 Stigmomela, *Csiki*, Ins. 195
 Stilhippus, *Ameghino*, Mamm. 49
 Stiva, *Hedley*, Moll. 80
 Stlengis, *Jordan and Starks*, Pisces
 29
 Stokeia, *Buckman*, Moll. 61
 Stomega, *Dall and Bartsch*, Moll. 84
 Strabops, *Jordan*, Ins. 185
 Stramia, *Marshall*, Ins. 181

- Streptochetus*, *Seely*, Spong. 26
Strombopsis, *Raffray*, Ins. 143
Struthiolariopsis, *Wilckens*, Moll. 78
Styloceros, *Meyrick*, Ins. 296
Stylophorella, *Ashmead*, Ins. 232
Styphlosoma, *Blandford*, Ins. 183
Sulcorinella, *Dall and Bartsch*, Moll. 84
Sundarion, *Kirkaldy*, Ins. 336
Suntemnonycha, *Péringuey*, Ins. 155
Surculoma, *Casey*, Moll. 75
Sustenodactylus, *Lull*, Rept. 33
Sva, *Enderlein*, Ins. 344
Sycoscapterella, *Ashmead*, Ins. 232
Sycoscapteridea, *Ashmead*, Ins. 232
Symbalophlebia, *Handlirsch*, Ins. 126
Symbolistis, *Meyrick*, Ins. 296
Symmius, *Richardson*, Crust. 41
Symmyrmica, *Wheeler*, Ins. 217
Sympheidole, *Wheeler*, Ins. 217
Symphonistis, *Turner*, Ins. 290
Symphylax, *Horváth*, Ins. 321
Sympiesomorpha, *Ashmead*, Ins. 232
Synale, *Mabille*, Ins. 252
Synapte, *Mabille*, Ins. 252
Synapticola, *Malard*, Moll. 87
Synechocryptus, *Schmiedeknecht*, Ins. 222
Syngonoevalgus, *Kolbe*, Ins. 158
Synogdoa, *Aurivillius*, Ins. 264
Synsillus, *Verrill*, Vermes 32
Syntaruchoides, *Kaye*, Ins. 251
Synrolina, *Dall and Bartsch*, Moll. 84
Systatica, *Turner*, Ins. 285

Tachardiæphagus, *Ashmead*, Ins. 232
Tachinaephagus, *Ashmead*, Ins. 232
Tæniola, *Dall*, Moll. 78
Taftia, *Ashmead*, Ins. 232
Tagalisca, *Horváth*, Ins. 321
Tamarinus, *Trouessart*, Mamm. 34
Tamboeria, *Seeley*, Rept. 33
Tancredus, *Distant*, Ins. 329
Tanita, *Bolívar*, Ins. 362
Tanqua, *Blanchard*, Verm. 54
Tanyjoppa, *Cameron*, Ins. 222
Tanynotus, *Cameron*, Ins. 235
Tapesia, *Bolívar*, Ins. 362
Taphrocranium, *Horváth*, Ins. 321
Tapinomorphus, *Hartmann*, Ins. 181
Tapinotaspis, *Holmberg*, Ins. 206
Taramelliceras, *Campana*, Moll. 61
Tarsoplectrus, *Lull*, Rept. 33

Tatria, *Kowalewski*, Verm. 47
Tectospira, *Picard*, Moll. 85
Tegeotherium, *Ameghino*, Mamm. 49
Teleorhinus, *Osborn*, Rept. 29
Teleutemnesta, *Holmberg*, Ins. 206
Telmatoscopus, *Eaton*, Ins. 302
Temnospira, *Perner*, Moll. 85
Tenuitarsus, *Bolívar*, Ins. 362
Termitogeton, *Desneux*, Ins. 346
Tersomia, *Kirby*, Ins. 357
Terpnochlorus, *Fairmaire*, Ins. 195
Terupis, *Simon*, Arachn. 32
Tetracystis, *Schuchert*, Echin. 95
Tetradelus, *Fauvel*, Ins. 138
Tetragonites, *Kittl*, Moll. 61
Tetranemopteryx, *Ashmead*, Ins. 232
Tetranychoides, *Banks*, Arachn. 47
Tetrarthra, *Dalla Torre*, Ins. 209
Tetrasmicra, *Ashmead*, Ins. 232
Tetrochlerus, *Breddin*, Ins. 319
Tettigoniella, *Jacobi*, Ins. 336
Texas, *Kirkaldy*, Ins. 315
Thalamarchis, *Meyrick*, Ins. 296
Thalattosaurus, *Merriam*, Rept. 32
Thanatophantia, *Kirkaldy*, Ins. 332
Thanatophara, *Kirkaldy*, Ins. 332
Thascia, *Cameron*, Ins. 223
Thaumastosaurus, *De Stefano*, Rept. 25
Thaumatoxena, *Breddin and Börner*, Ins. 315
Thaumonectes, *Senna*, Crust. 46
Theocopterus, *Smith*, Pisces 30
Thereuonema, *Verhoeff*, Myr. 10
Thereuopoda, *Verhoeff*, Myr. 10
Thermia, *Hutton*, Moll. 64
Thiotricha, *Meyrick*, Ins. 296
Thnetus, *Handlirsch*, Ins. 125
Thomosis, *Brown*, Ins. 133
Thorichthys, *Meek*, Pisces 35
Thoscora, *Schaus*, Ins. 265
Thrasymedes, *Kirkaldy*, Ins. 336
Threticus, *Eaton*, Ins. 302
Thrombus, *Oudemans*, Arachn. 47
Thryorchilus, *Oberholser*, Aves 57
Thurselinus, *Distant*, Ins. 330
Thynnica, *Miculicich*, Crust. 52
Thyregis, *Blackburn*, Ins. 152
Thyreosphe, *Ashmead*, Ins. 213
Thyreothremma, *Holmberg*, Ins. 206
Thyripton, *Bruner*, Ins. 362
Thysanichthys, *Jordan and Starks*, Pisces 30
Thysanocraspeda, *Warren*, Ins. 285
Thysanoctena, *Warren*, Ins. 285
Thysdarius, *Raffray*, Ins. 143
Tianella, *Attems*, Myr. 13

- Tichonia, *Semenow*, Ins. 132
 Timarchella, *Jacoby*, Ins. 195
 Tlaocera, *Péringuey*, Ins. 155
 Tmetomorpha, *Warren*, Ins. 286
 Tocris, *Brown*, Ins. 181
 Tœchomya, *Clarke*, Moll. 91
 Tomogonus, *d'Orbigny*, Ins. 152
 Tomopleura, *Casey*, Moll. 75
 Tomopygia, *Burr*, Ins. 353
 Tortilla, *Perner*, Moll. 85
 Toxotemnus, *Ameghino*, Mamm. 50
 Toxus, *Eigenmann*, Pisces 43
 Trachelonotus, *Reuter*, Ins. 329
 Trachyforcepia, *Topsent*, Spong. 25
 Trachytropis, *Jordan*, Ins. 185
 Tragelaphodes, *Bergroth*, Ins. 324
 Trapezorrhina, *Hauser*, Ins. 158
 Triarthra, *Dalla Torre*, Ins. 209
 Trichaulus, *Enderlein*, Ins. 340
 Trichencyrtus, *Ashmead*, Ins. 232
 Trichobasis, *Reuter*, Ins. 329
 Trichocentrus, *Horváth*, Ins. 321
 Trichocerapis, *Cockerell*, Ins. 206
 Trichochalcis, *Kieffer*, Ins. 232
 Trichochermes, *Kirkaldy*, Ins. 337
 Trichoclystis, *Warren*, Ins. 286
 Trichodriloides, *Fauvel*, Verm. 39
 Trichosphærule, *Fleischer*, Ins. 145
 Trichosterrha, *Warren*, Ins. 286
 Trichovalgus, *Kolbe*, Ins. 158
 Tricliophora, *Jacoby*, Ins. 195
 Trigonogastra, *Ashmead*, Ins. 232
 Trigonomelea, *Warren*, Ins. 286
 Trimegistus, *Jordan and Snyder*,
 Pisces 29
 Trimerocystis, *Schuchert*, Echin. 95
 Tricædusa, *Mabille*, Ins. 252
 Trioplognathus, *Ohaus*, Ins. 156
 Triplatyx, *Horváth*, Ins. 319
 Tripleurocrinus, *Wood*, Echin. 93
 Triptonathus, *Berthoumieu*, Ins.
 223
 Trismicra, *Ashmead*, Ins. 232
 Tristylotus, *Parkes*, Coel. 21
 Tritadelpha, *Meyrick*, Ins. 296
 Triticites, *Girty*, Prot. 49
 Tritodiscoelius, *Dalla Torre*, Ins. 209
 Tritoniscus, *Dall*, Moll. 78
 Tritonocauda, *Dall*, Moll. 78
 Trizona, *Popofsky*, Prot. 52
 Trochuda, *Schaus*, Ins. 265
 Tropæas, *Dall and Bartsch*, Moll. 84
 Tropidogastra, *Ashmead*, Ins. 233
 Tropisurcula, *Casey*, Moll. 75
 Trotorhombia, *Warren*, Ins. 286
 Trypanophis, *Keysseltz*, Prot. 57
 Tubogyra, *Perner*, Moll. 86
 Tubomphalus, *Perner*, Moll. 86
 Tulbaghia, *Péringuey*, Ins. 155
 Turnebus, *Distant*, Ins. 329
 Turriger, *Kertész*, Ins. 312
 Turritriton, *Dall*, Moll. 78
 Tylobolus, *Cook*, Myr. 16
 Tylocrinus, *Wood*, Echin. 93
 Tylokepon, *Stebbing*, Crust. 42
 Tylopeltis, *Reuter*, Ins. 329
 Tyraquellus, *Distant*, Ins. 329
 Umbospira, *Perner*, Moll. 86
 Umbrochus, *Perner*, Moll. 86
 Umbotropis, *Perner*, Moll. 86
 Udenocera, *Ricardo*, Ins. 303
 Ugada, *Distant*, Ins. 331
 Uhligia, *Koenen*, Moll. 61
 Ulfa, *Dall and Bartsch*, Moll. 84
 Uliura, *Warren*, Ins. 286
 Umjaba, *Distant*, Ins. 332
 Uncifer, *Jordan*, Ins. 185
 Urobopyrus, *Richardson*, Crust. 42
 Urocalpe, *Warren*, Ins. 286
 Uroderostenus, *Ashmead*, Ins. 233
 Urodinychus, *Berlese*, Arachn. 48
 Uroentedon, *Ashmead*, Ins. 233
 Urophis, *Berlese*, Arachn. 48
 Urometopus, *Formanek*, Ins. 181
 Uroobovella, *Berlese*, Arachn. 48
 Uroplitella, *Berlese*, Arachn. 48
 Urotrachytes, *Berlese*, Arachn. 49
 Ussuria, *Nikolski*, Pisces 49
 Vagna, *Dall and Bartsch*, Moll. 84
 Valdiviella, *Steuer*, Crust. 52
 Valleriola, *Distant*, Ins. 329
 Vanduzeeina, *Schouteden*, Ins. 319
 Varania, *Simroth*, Moll. 63
 Varanosaurus, *Brioli*, Rept. 33
 Varicobela, *Casey*, Moll. 75
 Varneria, *Dyar*, Ins. 291
 Varroa, *Oudemans*, Arachn. 49
 Vaucheria, *Pallary*, Moll. 63
 Vellitor, *Jordan and Starks*, Pisces
 29
 Venustria, *Goding and Froggatt*,
 Ins. 332
 Veraëqua, *Jordan and Starks*, Pisces
 32
 Veroeia, *Baker*, Crust. 37
 Versispira, *Perner*, Moll. 82
 Verticipronus, *Hedley*, Moll. 89
 Vestura, *Swinhoe*, Ins. 271
 Veternio, *Snyder*, Pisces 45
 Vidoviccia, *Brusina*, Moll. 66
 Vijaya, *Walker*, Crust. 46
 Vilia, *Dall and Bartsch*, Moll. 84

- Villanovanus, *Distant*, Ins. 324
Visma, *Dall and Bartsch*, Moll. 84
Volkelius, *Distant*, Ins. 329
Voluspa, *Dall and Bartsch*, Moll. 84
Vulnus, *Sykes*, Moll. 66
Wagneriana, *Cambridge*, Arachn. 30
Westerlundia, *Kobelt*, Moll. 67
Westermannias, *Kirkaldy*, Ins. 322
Westwoodella, *Ashmead*, Ins. 233
Westwoodiella, *Szépligeti*, Ins. 225
Wettsteinia, *Dalla Torre*, Ins. 209
Willistoniella, *Meunier*, Ins. 125
Xanium, *Enderlein*, Ins. 181
Xanthoatomus, *Ashmead*, Ins. 233
Xanthomelanus, *Ashmead*, Ins. 233
Xanthomicrodus, *Cameron*, Ins. 225
Xenapates, *Eaton*, Ins. 302
Xenocara, *Regan*, Pisces 46
Xenogramma, *Waite*, Pisces 33
Xenolina, *Jacoby*, Ins. 195
Xenomacrus, *Faust*, Ins. 181
Xenopelidnota, *Bates*, Ins. 156
Xenotherium, *Ameghino*, Mamm. 49
Xerociris, *Cockerell*, Ins. 271
Xestopsylla, *Baker*, Ins. 314
Xosa, *Kirkaldy*, Ins. 315
Xosias, *Kirkaldy*, Ins. 332
Xosophora, *Kirkaldy*, Ins. 332
Xosopsaltria, *Kirkaldy*, Ins. 332
Xylecata, *Swinhoe*, Ins. 265
Xystocheir, *Cook*, Myr. 14
Yanga, *Distant*, Ins. 332
Zagrammosoma, *Ashmead*, Ins. 233
Zaischnopsis, *Ashmead*, Ins. 233
Zanchisme, *Kirkaldy*, Ins. 324
Zanchius, *Distant*, Ins. 329
Zanophara, *Kirkaldy*, Ins. 336
Zaommomyia, *Ashmead*, Ins. 233
Zapata, *Bruner*, Ins. 362
Zelinkia, *Giard*, Verm. 56
Zenida, *Mabille*, Ins. 252
Zethoides, *Cameron*, Ins. 209
Zeuctostyla, *Warren*, Ins. 286
Zophopetes, *Mabille*, Ins. 252
Zygacantha, *Popofsky*, Prot. 52
Zygapophysia, *Popofsky*, Prot. 52
Zygonlonche, *Popofsky*, Prot. 52
Zygonlonchidium, *Popofsky*, Prot. 52
Zygoptera, *Popofsky*, Prot. 52

CORRIGENDA.

- GEN. SUB., p. 46, Title 805, for "SOHOETENSACK" read "SCHOETENSACK."
INSECTA, p. 133, line 6 from bottom, for "*Annommatophilus*" read "*Anommatophilus*."
,, p. 145, line 4, for "*Blatrodromus*" read "*Blattodromus*."
,, p. 173, line 17 from bottom, for "*Centorrhynchus*" read "*Ceutorrhynchus*."
,, p. 217, line 11, for "*Sympheisole*" read "*Sympheidole*."
,, p. 231, line 2, for "*Pestasmicra*" read "*Pentasmicra*."

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